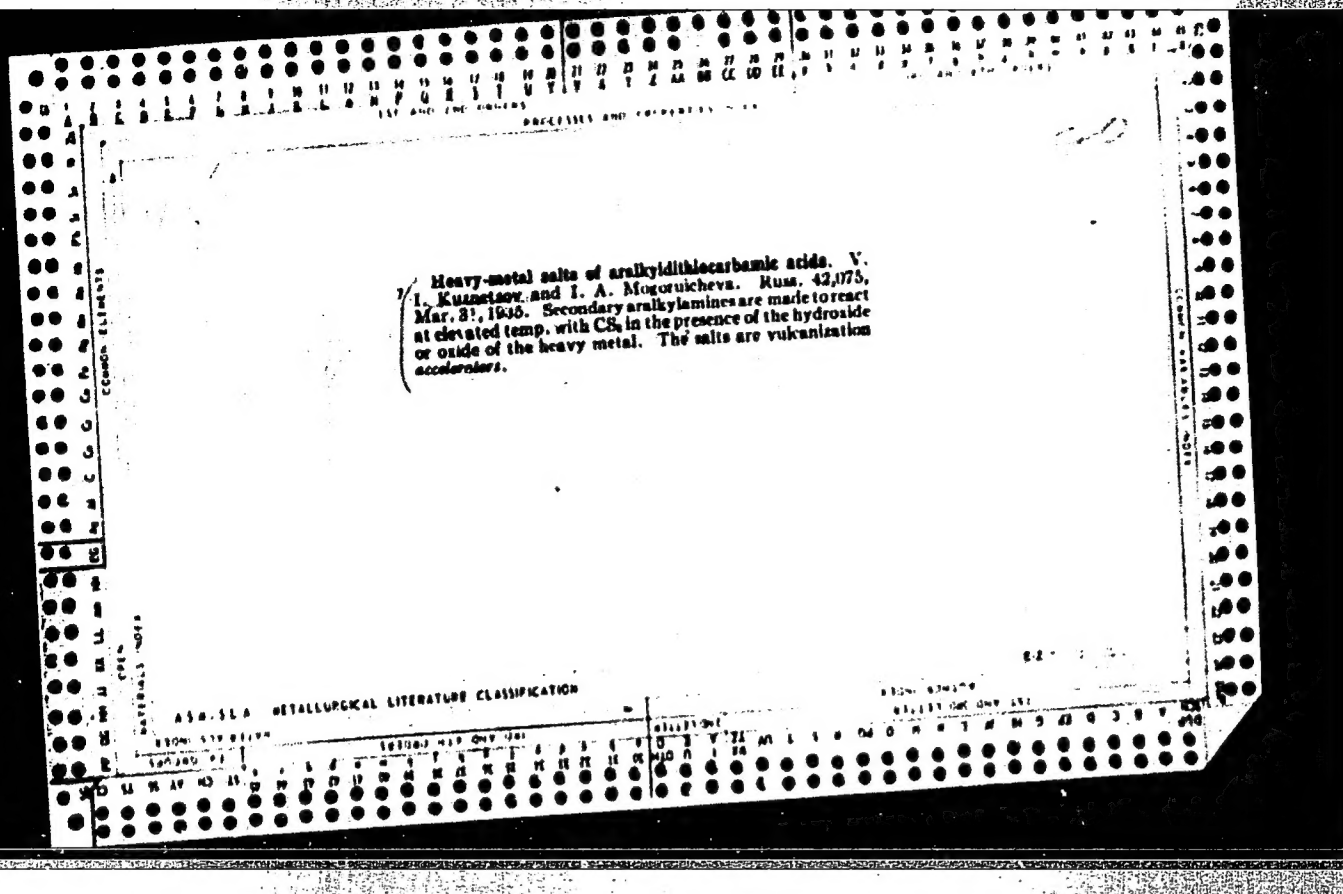


Test paper for carbon disulfide. V. I. KUMENOV. *Azulinobrachnaya Prom.* 2, No. 3, 1 K (1932).—For detection of CS_2 in air the use of strips of filter paper treated with a soln. of Cu salts in an excess of Me_2NH is proposed which, in contact with CS_2 , becomes brown: $\text{Me}_2\text{NH} + \text{CS}_2 = \text{Me}_2\text{NCS}_2\text{SH}$; $\text{Me}_2\text{NCS}_2\text{SH} + \text{Me}_2\text{NH} = \text{Me}_2\text{NCS}_2\text{SH} \cdot \text{Me}_2\text{NH}$, which with Cu forms the dithiocarbamate ($\text{Me}_2\text{NCS}_2\text{SCu}$). Me_2NH may be substituted by other secondary amines, such as Et_2NH and $\text{C}_4\text{H}_9\text{NH}$, and Cu by Co. All these reagents are affected by CS_2 and H_2S , and for detection of CS_2 in the presence of H_2S there is introduced into the reagent the CN complex which is decompl. by dithiocarbamate but not by H_2S . To the Cu- Me_2NH soln. is added a soln. of cyanide to the exact point of decolorization to form the complex $\text{Cu}(\text{CN})_2$ and paper treated with this reagent becomes yellow to brown in an atm. contg. CS_2 and remains colorless in an atm. contg. H_2S , while in an atm. contg. both CS_2 and H_2S the wet paper is colored yellow green and becomes brown on drying. This test paper is also unaffected by halogen acids, free halogens, oxides of N, P_2O_5 , CO_2 , etc. The reagent is sensitive to 0.001 g. of CS_2 in 1 l. of air, and to 1-2% of CS_2 in the atm. of pure H_2 . CHAS. ILIENC

ASME-314 METALLURGICAL LITERATURE CLASSIFICATION

PROCESS AND PROPERTIES																									
13																									
<p>Are dyes from <i>p</i>-aminophenol-3,5-disulfonic acid. V. I. Kuznetsov. <i>Antikrazochamy Prom.</i> 2, No. 6-8, 14-22(1932).—1,2,3,5-C₆H₃(NH₂)(OH)(SO₃H)₂ (I), obtained as a by-product in the prepn. of Me₂NH by the decompn. of <i>p</i>-Me₂NC₆H₄N(SO₃H)₂ with acids, gives almost colorless solns. in H₂O, which on addn. of alkalis give a characteristic azure-blue fluorescence. I forms a very stable diazonium compd. (II), which in H₂O resists boiling 2 hrs. or storing 8 months at room temp. Therefore, the diazotizing and all subsequent operations with II were carried out at room temp. or with mild heating. Tests were made in forming mono-, di- and triazo dyes of II with phenols, amines, aminophenols and their sulfonic acids of the C₆H₅ and C₆H₄ series. II failed to give monazo compds. with PhOH, <i>p</i>-C₆H₄(OH)NO₂, <i>p</i>-C₆H₄(OH)CO₂H in alk. medium, and with PhNH₂, <i>p</i>-C₆H₄MeNH₂, and O acid in weak acid or neutral media. Addnl. data are mostly confined to tabular presentation of the colors of dyes and their fastness.</p> <p>Chas. Blane</p>																									
<p>ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION</p>																									



CA 7

PROCESSED AND REPRODUCED FROM

Detection of resorcinol in phenol. V. I. Kuznetsov.
~~Antikrazachnaya Prem. 3, 218(1936)~~—Add a few
 drops of aq. 4-diazophenol-5,5-disulfonic acid and of
 concd. aq. NH_3 to aq. 1% PhOH or cresol; a red coloration
 is obtained if 1% of resorcinol is present in 1 cc. of the
 phenol. B. C. A.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

100000 419 000 000

100000 419 000 000

100000 419 000 000

10

Ca

PROCESSING AND PROPERTIES INDEX

The synthesis of thiamram. V. I. Kurnetsov and D. R. Logunova. *J. Chem. Ind. (Moscow)* 12, 708-72 (1935).—In the reaction between CS_2 and Me_2NH in the presence of NaOH , the presence of heavy metals favors the formation of yellow Me_2CS or colloidal FeS . Such contamination can be avoided by adding the NaOH slowly in a closed app. Quant. yields of $\text{Me}_2\text{NCS} \cdot \text{Na}$ (I) are obtained. The oxidation of I by NaNO_2 goes smoothly in a closed app. in the presence of a low pressure of CO , to give quant. yields of thiamram disulfide. HOCl cannot be used in this reaction. If Cl_2 is passed into a mixt. of I and Na_2CO_3 , the product is contaminated by thiamram monosulfide.

H. M. I. abstract no.

ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION

SECTION SYMBOLS

SECTION

SYMBOL

SECTION

SYMBOL

COMMON ELEMENTS										PROCESSES AND PROPERTIES INDEX									
BC										B-II-1									
<p>Preparation of diphenylthiocarbamide. V. I. Kuznetsov and P. M. Anonovitch (J. Chem. Ind. Russ., 1948, 12, 843-844). — $\text{CS}(\text{NHPh})_2$ is obtained in 99% yield from CS, NHPh, and aq. NaOH when the reaction temp. is 25°.</p>																			
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>																			
1970-71										1970-71									
1970-71										1970-71									

[illegible]

10

The synthesis of arylalkyl-substituted dithiocarbamates. V. I. Kuznetsov and I. M. Gorycheva. *Org. Chem. Ind. (U. S. S. R.)* 2: 542-4 (1966); *Chem. Zentr.* 1937, I, 2087; cf. D. R. P. 448,832. - On the basis of the fact that the difficulty sol. heavy metal salts of the arylalkylthiocarbamic acids are more stable than their readily sol. salts (cf. C. A. 19, 973) a method is given for the prepn. of Zn phenylthiocarbamate. PhNHCS₂ (18 g.), 40 g. CS₂ and 20 g. Zn(III) (prepd. in the reaction flask by treating a soln. of ZnSO₄ with 20% NaOH) are heated in 120 cc. oil. alc. for 10 hrs. with continuous stirring. Treatment of the reaction mass with steam and the residue remaining with hot 20% NH₄OH gives a pure product as residue in theoretical yield. The method is capable of further application. W. A. Moore

<p>Ca</p> <p>23</p> <p>Gray and black vat dyes. V. I. Kuznetsov and Kh. M. Malkhman. Russ. 30,555, Feb. 28, 1937. Gray and black vat dyes are prepd. from the nitration products of violanthrone heated in dry state to 800-850°.</p>									
<p>ABB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>									
<p>FROM SYNTHESE</p>									
<p>FROM SYNTHESE</p>									

10

CR

Reduction of oxidation products of violanthrone and methylation of the product. V. I. Kuznetsov, Russ. 52,340, April 30, 1938. The reduction is effected by heating with kerosene with or without other solvents, such as polychlorobenzene or nitrobenzene. Simultaneous methylation is effected by a methyl ester of a sulfonic acid.

ABO.SLA METALLURGICAL LITERATURE CLASSIFICATION

Ca

10

PROCESS AND PROPERTIES INDEX

The synthesis of polycyclic ketones. V. I. Kuznetsov. *Uchenye Zapiski Saratov. Gosudarst. Univ., Sbornik Nauch. Rabot Studentov* 1938, 12: 23; *Khim. Referat. Zhur.* 1939, No. 9, 24.—The high-boiling fractions obtained from the condensation of crotonaldehyde with acetone and MeCOEt in the presence of NaOH (tetraemic ketones) were investigated. The Meerwein method for the synthesis of crotonylideneacetone [Ann. 358, 85(1907)] was used. From acetone and crotonaldehyde a product was obtained which yielded (under vacuum distn. in a CO₂ current) 31.1% of a fraction, b_p 176-182°, d₄²⁰ 1.06, n_D²⁰ 1.490, MR 66.88 (calcd. for C₁₁H₁₆O, 81.12) and mol. wt. 163.48

and 163.02 (calcd. for C₁₁H₁₆O, 162). Four mols. of Br combine with each mol. of the ketone (according to Me-Ilmney). It was not possible to obtain the cryst. oxide. The dicrotonylideneacetone structure is given to the ketone (MeCH:CHCH:CHCOCH:CHCH:CHMe). Under the same conditions with MeCOEt a product was obtained which contained 12% of the 138-43° fraction (8 mm.), d₄²⁰ 0.908, n_D²⁰ 1.489, MR 52 (calcd. for C₁₁H₁₆O, 55.75), mol. wt. 190.55 and 190.96 (calcd. for C₁₁H₁₆O, 176). Four mols. of Br combined with each mol. of ketone. The supposed structure of the product is MeCH:CHCH:CHCOCH:CHCH:CHMe. Both these investigated products were easily sol. in benzene and less sol. in EtOH. When placed on a glass they formed a hard film after 5 days.

W. R. Henn

ASAC-114 METALLURGICAL LITERATURE CLASSIFICATION

PROCEDURES AND REAGENTS INDEX

New organic reagents for inorganic analysis V. I.
Kuznetsov. Akad. Nauk. S. S. R., Trudy Vsesoyuz
Konferentsii Anal. Khim. 1, 81-8(1950); Khim. Referat.
Zhurnal, 1940, No. 2, 57-8; cf. C. A. 35, 2322. — Aluminato
Zhuo. 1940, No. 2, 57-8; cf. C. A. 35, 2322. In the presence
of mineral acid; no other ion is pptd. under the optimum
conditions. Here the azo group is the specific pptg. agent.
The OH group in such compds., when ortho to the azo
group, helps to ppt. Zr and Hf but the action is not as
specific; other elements of Group IV are also pptd.
Amino and alkyl amino groups tend to make the Zr and Hf
ppts. more sol. A typical precipitant for Zr and Hf is 2-
hydroxy-5-methylazobenzene-4-sulfonic acid. The red soln. of
Zr in 100 million of soln. can be detected. The red soln. of
the hydrochloride of anthraquinone-1-acid-4-dimethyl-
aniline forms a blue-violet spot with as little as 0.01 % of
Fe but similar spots are obtained with U, Mo, Au, Zn, Cd,
Hg⁺⁺, Pb⁺⁺⁺⁺, Ir, Fe, Co and Al. The Sn and U spots
alone disappear when substituted with HF. Sulfonic acids
of α-naphthal and its substituted compds. are used as indi-
cators in mercurimetry. Their colorless solns. give a
bright orange color with Hg⁺⁺ ions but when solns. of
Hg(NO₃)₂ are titrated with alkali halide (to form undissol-
uble mercuric halide) the color disappears to the end
point.

W. R. Henn

COMMON ELEMENTS		COMMON VALUABLE METALS	
<p>BC</p> <p>A-1</p> <p>Detection and determination of germanium. I. New colour reaction. Application of hydrogen selenide to detection of germanium. V. I. KRENATOV (<i>J. Gen. Chem. Russ.</i>, 1930, 9, 1049-1054).—Ge (20 g.) + NaCl (20 g.) + Al (14 g.) are gently heated. The Al_2Ge_3 obtained is decomposed by H_2O, and the H_2Ge is absorbed by CH_3O solution. 3 drops of the resulting solution are added to 5 c.c. of Ge solution + 1 c.c. of conc. HCl, when a yellow turbidity or a yellow ppt. is produced. When kept for 2 days the H_2Ge-CH_3O solution becomes turbid also in the absence of Ge. J. J. B.</p>		<p>ASB.3.1A METALLURGICAL LITERATURE CLASSIFICATION</p> <p>100000 110000 120000 130000 140000 150000 160000 170000 180000 190000</p>	

CA

Molecular heat capacity of hydrocarbons at different stages of hydrogenation. V. J. Kamenov. *J. Gen. Chem.* (U. S. S. R.) 9, 2008-11(1939).—A discussion of the heat capacity of aliphatic and aromatic hydrocarbons at different degrees of unsat. The mol. heat capacity of acid. compounds is always greater than that of unsatd. compounds. H. Priestley

Chem. Lab., Saratov Highway
U-1626, 11 Jan 52

CHELINTSEV, V. V.; KUZNETSOV, V.; KUZNETSOV, G.

"Condensations of Furanic Compounds -- IX. Eutectics of Ketono-Phenolic Systems and the Fixing Among Them of Oxonium Complexes, "Zhur. Obshch. Khim., 9, No. 2, 1939.

Received 7 June 1938

U-1517, 22 Oct 1951.


KUZNETSOV/V818

600

1. CHELINTSEV, V. V., KUZNETSOV, V.I.

2. USSR (600)

"Furan Compounds and Their Condensation—XII. Polyene Compounds (Aliphatic and Furanic) and their Condensation", Zhur. Obshch. Khim., 9, No. 20, 1939. Received 21 May 1939.

9.  Report U-1626, 11 Jan 1952.

KUZNETSOV4V818

600

1. KUZNETSOV, V.I.

2. USSR (600)

"Obtaining - Ketoles of the Aliphatic Series by the action of Individual Organomagnesium Compounds on Furfurol", Zhur. Obshch. Khim., 9, No. 24, 1939. Lab. of Organic Chem., Saratov Automobil'no-Dorozhnyy Inst.
Received 10 July 1939.


9. ■ Report U-1621, 11 Jan 1952.

<p>ca</p>		<p>10</p>	
<p>The reactions of aminobenzenesulfonic acids with 2-furaldehyde. V. I. Kuznetsov and N. A. Vasyunina. <i>J. Gen. Chem. (U. S. S. R.)</i> 18, 1233-9 (1946).—When <i>o</i>-NH₂C₆H₄SO₃Na (I), HCl and 2-furaldehyde (II) are mixed in dil. aq. soln., a ppt. of the Schiff base, decompd. without melting at 166–7°, is obtained. If the soln. is more concd. and the acidity is carefully controlled, a Stenhouse dye, the <i>o,o'</i>-disulfonic acid of hydroxyphthalonitrile diimide, H₂O₂AsC₆H₃NHCH₂CH₂C(OH)CH₂NC₆H₄SO₃Na, is obtained. This is very unstable, especially in alk. solns., in which the orange color disappears in a few seconds. The dye forms colored salts with Mn²⁺, Ti, Zr, Hf, Co, Ta, Tb, Sb, Bi, chromic, Al³⁺, W and U ions. These salts can also form if a dil. soln. of HCl, II and I is prepd. and treated with a soln. of the metal. At first the colorless salt of the aramic acid pptn. and this gradually changes to the red salt of the Stenhouse dye. The reaction can be used as a color test for the metals named, but it is sensitive only to solns. stronger than 0.1 mg. per ml. The <i>m</i>- and <i>p</i>-isomers of I do not form Schiff bases with II, but give the Stenhouse dye at once. H. Al. Lechevter</p>			
<p>ASH-55A. METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>STANDARD</p>			

1. KUZNETSOV, V. I.; VASYUNINA, N.A.

2. USSR (600)

"The Reaction of Aminophenylarsenic Acid with Furfurol," Zhur. Obshch. Khim., 10, No. 13, 1940. All-Union Sci, Res. Inst. for Mineral Materials. Received 16, 1940.

9.  Report U-1610, 3 Jan 1952.

*A Colour Test for Stannic Ion. V. I. Kuznetsov (*Zhur., Prikladn. Khimi.*, U.S. Applied Chem.), 1940, 12, 768-773; (*C. Abstr.*, 1941, 35, 3100).—(In Russian.) The red solution of anthraquinone-1-am-4-dimethylamino-hydrochloride) The red solution of anthraquinone-1-am-4-dimethylaniline hydrochloride in alcohol + HCl forms with Sn^{IV} a bluish-violet precipitate of chloride in alcohol + HCl forms with Sn^{IV} a bluish-violet precipitate of chloride in alcohol + HCl forms with Sn^{IV}. The test is most sensitive in a solution saturated with C₁₂H₁₀(O,N)₂.H.NCCL₂. The limiting dilution of Sn is 1 : 500,000. Filter paper impregnated with NaCl. The limiting dilution of Sn is 1 : 500,000. Filter paper impregnated with the reagent can be used for a spot test; as little as 0·01 g Sn nated with the reagent can be used for a spot test; as little as 0·01 g Sn nated with the reagent can be used for a spot test; as little as 0·01 g Sn
can be detected. The spot formed with Fe disappears on wetting with a
dilute solution of HF. Zn, Cd, Mg, and Pt produce the same colour; Sb^V,
V, Mo, Au, Ir, Te, Th, and Al (in high concentration) give a pale violet
colour; in very dilute solution most of them now do not interfere.

.....

ASME-11A METALLURGICAL LITERATURE CLASSIFICATION

CIA-RDP86-00513R000928210007-2"

1ST AND 2ND CODES										PROCESS AND PROPERTIES INDEX										3RD AND 4TH CODES									
11 12 13 14 15 16 17 18 19 20										21 22 23 24 25 26 27 28 29 30										31 32 33 34 35 36 37 38 39 40									
41 42 43 44 45 46 47 48 49 50										51 52 53 54 55 56 57 58 59 60										61 62 63 64 65 66 67 68 69 70									
71 72 73 74 75 76 77 78 79 80										81 82 83 84 85 86 87 88 89 90										91 92 93 94 95 96 97 98 99 100									
101 102 103 104 105 106 107 108 109 110										111 112 113 114 115 116 117 118 119 120										121 122 123 124 125 126 127 128 129 130									
131 132 133 134 135 136 137 138 139 140										141 142 143 144 145 146 147 148 149 150										151 152 153 154 155 156 157 158 159 160									
161 162 163 164 165 166 167 168 169 170										171 172 173 174 175 176 177 178 179 180										181 182 183 184 185 186 187 188 189 190									
191 192 193 194 195 196 197 198 199 200										201 202 203 204 205 206 207 208 209 210										211 212 213 214 215 216 217 218 219 220									
221 222 223 224 225 226 227 228 229 230										231 232 233 234 235 236 237 238 239 240										241 242 243 244 245 246 247 248 249 250									
251 252 253 254 255 256 257 258 259 260										261 262 263 264 265 266 267 268 269 270										271 272 273 274 275 276 277 278 279 280									
281 282 283 284 285 286 287 288 289 290										291 292 293 294 295 296 297 298 299 300										301 302 303 304 305 306 307 308 309 310									
311 312 313 314 315 316 317 318 319 320										321 322 323 324 325 326 327 328 329 330										331 332 333 334 335 336 337 338 339 340									
341 342 343 344 345 346 347 348 349 350										351 352 353 354 355 356 357 358 359 360										361 362 363 364 365 366 367 368 369 370									
371 372 373 374 375 376 377 378 379 380										381 382 383 384 385 386 387 388 389 390										391 392 393 394 395 396 397 398 399 400									
401 402 403 404 405 406 407 408 409 410										411 412 413 414 415 416 417 418 419 420										421 422 423 424 425 426 427 428 429 430									
431 432 433 434 435 436 437 438 439 440										441 442 443 444 445 446 447 448 449 450										451 452 453 454 455 456 457 458 459 460									
461 462 463 464 465 466 467 468 469 470										471 472 473 474 475 476 477 478 479 480										481 482 483 484 485 486 487 488 489 490									
491 492 493 494 495 496 497 498 499 500										501 502 503 504 505 506 507 508 509 510										511 512 513 514 515 516 517 518 519 520									
521 522 523 524 525 526 527 528 529 530										531 532 533 534 535 536 537 538 539 540										541 542 543 544 545 546 547 548 549 550									
551 552 553 554 555 556 557 558 559 560										561 562 563 564 565 566 567 568 569 570										571 572 573 574 575 576 577 578 579 580									
581 582 583 584 585 586 587 588 589 590										591 592 593 594 595 596 597 598 599 600										601 602 603 604 605 606 607 608 609 610									
611 612 613 614 615 616 617 618 619 620										621 622 623 624 625 626 627 628 629 630										631 632 633 634 635 636 637 638 639 640									
641 642 643 644 645 646 647 648 649 650										651 652 653 654 655 656 657 658 659 660										661 662 663 664 665 666 667 668 669 670									
671 672 673 674 675 676 677 678 679 680										681 682 683 684 685 686 687 688 689 690										691 692 693 694 695 696 697 698 699 700									
701 702 703 704 705 706 707 708 709 710										711 712 713 714 715 716 717 718 719 720										721 722 723 724 725 726 727 728 729 730									
731 732 733 734 735 736 737 738 739 740										741 742 743 744 745 746 747 748 749 750										751 752 753 754 755 756 757 758 759 760									
761 762 763 764 765 766 767 768 769 770										771 772 773 774 775 776 777 778 779 780										781 782 783 784 785 786 787 788 789 790									
791 792 793 794 795 796 797 798 799 800										801 802 803 804 805 806 807 808 809 810										811 812 813 814 815 816 817 818 819 820									
821 822 823 824 825 826 827 828 829 830										831 832 833 834 835 836 837 838 839 840										841 842 843 844 845 846 847 848 849 850									
851 852 853 854 855 856 857 858 859 860										861 862 863 864 865 866 867 868 869 870										871 872 873 874 875 876 877 878 879 880									
881 882 883 884 885 886 887 888 889 890										891 892 893 894 895 896 897 898 899 900										901 902 903 904 905 906 907 908 909 910									
911 912 913 914 915 916 917 918 919 920										921 922 923 924 925 926 927 928 929 930										931 932 933 934 935 936 937 938 939 940									
941 942 943 944 945 946 947 948 949 950										951 952 953 954 955 956 957 958 959 960										961 962 963 964 965 966 967 968 969 970									
971 972 973 974 975 976 977 978 979 980										981 982 983 984 985 986 987 988 989 990										991 992 993 994 995 996 997 998 999 1000									
1001 1002 1003 1004 1005 1006 1007 1008 1009 1010										1011 1012 1013 1014 1015 1016 1017 1018 1019 1020										1021 1022 1023 1024 1025 1026 1027 1028 1029 1030									
1031 1032 1033 1034 1035 1036 1037 1038 1039 1040										1041 1042 1043 1044 1045 1046 1047 1048 1049 1050										1051 1052 1053 1054 1055 1056 1057 1058 1059 1060									
1061 1062 1063 1064 1065 1066 1067 1068 1069 1070										1071 1072 1073 1074 1075 1076 1077 1078 1079 1080										1081 1082 1083 1084 1085 1086 1087 1088 1089 1090									
1091 1092 1093 1094 1095 1096 1097 1098 1099 1100										1101 1102 1103 1104 1105 1106 1107 1108 1109 1110										1111 1112 1113 1114 1115 1116 1117 1118 1119 1120									
1121 1122 1123 1124 1125 1126 1127 1128 1129 1130										1131 1132 1133 1134 1135 1136 1137 1138 1139 1140										1141 1142 1143 1144 1145 1146 1147 1148 1149 1150									
1151 1152 1153 1154 1155 1156 1157 1158 1159 1160										1161 1162 1163 1164 1165 1166 1167 1168 1169 1170										1171 1172 1173 1174 1175 1176 1177 1178 1179 1180									
1181 1182 1183 1184 1185 1186 1187 1188 1189 1190										1191 1192 1193 1194 1195 1196 1197 1198 1199 1200										1201 1202 1203 1204 1205 1206 1207 1208 1209 1210									
1211 1212 1213 1214 1215 1216 1217 1218 1219 1220										1221 1222 1223 1224 1225 1226 1227 1228 1229 1230										1231 1232 1233 1234 1235 1236 1237 1238 1239 1240									
1241 1242 1243 1244 1245 1246 1247 1248 1249 1250										1251 1252 1253 1254 1255 1256 1257 1258 1259 1260										1261 1262 1263 1264 1265 1266 1267 1268 1269 1270									
1271 1272 1273 1274 1275 1276 1277 1278 1279 1280										1281 1282 1283 1284 1285 1286 1287 1288 1289 1290										1291 1292 1293 1294 1295 1296 1297 1298 1299 1300									
1301 1302 1303 1304 1305 1306 1307 1308 1309 1310										1311 1312 1313 1314 1315 1316 1317 1318 1319 1320										1321 1322 1323 1324 1325 1326 1327 1328 1329 1330									
1331 1332 1333 1334 1335 1336 1337 1338 1339 1340										1341 1342 1343 1344 1345 1346 1347 1348 1349 1350										1351 1352 1353 1354 1355 1356 1357 1358 1359 1360									
1361 1362 1363 1364 1365 1366 1367 1368 1369 1370										1371 1372 1373 1374 1375 1376 1377 1378 1379 1380										1381 1382 1383 1384 1385 1386 1387 1388 1389 1390									
1391 1392 1393 1394 1395 1396 1397 1398 1399 1400										1401 1402 1403 1404 1405 1406 1407 1408 1409 1410										1411 1412 1413 1414 1415 1416 1417 1418 1419 1420									
1421 1422 1423 1424 1425 1426 1427 1428 1429 1430										1431 1432 1433 1434 1435 1436 1437 1438 1439 1440										1441 1442 1443 1444 1445 1446 1447 1448 1449 1450									
1451 1452 1453 1454 1455 1456 1457 1458 1459 1460										1461 1462 1463 1464 1465 1466 1467 1468 1469 1470										1471 1472 1473 1474 1475 1476 1477 1478 1479 1480									
1481 1482 1483 1484 1485 1486 1487 1488 1489 1490										1491 1492 1493 1494 1495 1496 1497 1498 1499 1500										1501 1502 1503 1504 1505 1506 1507 1508 1509 1510									
1511 1512 1513 1514 1515 1516 1517 1518 1519 1520										1521 1522 1523 1524 1525 1526 1527 1528 1529 1530										1531 1532 1533 1534 1535 1536 1537 1538 1539 1540									
1541 1542 1543 1544 1545 1546 1547 1548 1549 1550										1551 1552 1553 1554 1555 1556 1557 1558 1559 1560										1561 1562 1563 1564 1565 1566 1567 1568 1569 1570									
1571 1572 1573 1574 1575 1576 1577 1578 1579 1580										1581 1582 1583 1584 1585 1586 1587 1588 1589 1590										1591 1592 1593 1594 1595 1596 1597 1598 1599 1600									
1601 1602 1603 1604 1605 1606 1607 1608 1609 1610										1611 1612 1613 1614 1615 1616 1617 1618 1619 1620										1621 1622 1623 1624 1625 1626 1627 1628 1629 1630									
1631 1632 1633 1634 1635 1636 1637 1638 1639 1640										1641 1642 1643 1644 1645 1646 1647 1648 1649 1650										1651 1652 1653 1654 1655 1656 1657 1658 1659 1660									
1661 1662 1663 1664 1665 1666 1667 1668 1669 1670										1671 1672 1673 1674 1675 1676 1677 1678 1679 1680										1681 1682 1683 1684 1685 1686 1687 1688 1689 1690									
1691 1692 1693 1694 1695 1696 1697 1698 1699 1700										1701 1702 1703 1704 1705 1706 1707 1708 1709 1710										1711 1712 1713 1714 1715 1716 1717 1718 1719 1720									
1721 1722 1723 1724 1725 1726 1727 1728 1729 1730										1731 1732 1733 1734 1735 1736 1737 1738 1739 1740										1741 1742 1743 1744 1745 1746 1747 1748 1749 1750									
1751 1752 1753 1754 1755 1756 1757 1758 1759 1760										1761 1762 1763 1764 1765 1766 1767 1768 1769 1770										1771 1772 1773 1774 1775 1776 1777 1778 1779 1780									
1781 1782 1783 1784 1785 1786 1787 1788 1789 1790										1791 1792 1793 1794 1795 1796 1797 1798 1799 1800										1801 1802 1803 1804 1805 1806 1807 1808 1809 1810									
1811 1812 1813 1814 1815 1816 1817 1818 1819 1820										1821 1822 1823 1824 1825 1826 1827 1828 1829 1830										1831 1832 1833 1834 1835 1836 1837 1838 1839 1840									
1841 1842 1843 1844 1845 1846 1847 1848 1849 1850										1851 1852 1853 1854 1855 1856 1857 1858 1859 1860										1861 1862 1863 1864 1865 1866 1867 1868 1869 1870									
1871 1872 1873 1874 1875 1876 1877 1878 1879 1880										1881 1882 1883 1884 1885 1886 1887 1888 1889 1890										1891 1892 1893 1894 1895 1896 1897 1898 1899 1900									
1901 1902 1903 1904 1905 1906 1907 1908 1909 1910										1911 1912 1913 1914 1915 1916 1917 1918 1919 1920										1921 1922 1923 1924 1925 1926 1927 1928 1929 1930									
1931 1932 1933 1934 1935 1936 1937 1938 1939 1940										1941 1942 1943 1944 1945 1946 1947 1948 1949 1950										1951 1952 1953 1954 1955 1956 1957 1958 1959 1960									
1961 1962 1963 1964 1965 1966 1967 1968 1969 1970										1971 1972 1973 1974 1975 1976 1977 1978 1979 1980										1981 1982 1983 1984 1985 1986 1987 1988 1989 1990									
1991 1992 1993 1994 1995 1996 1997 1998 1999 2000										2001 2002 2003 2004 2005 2006 2007 2008 2009 2010										2011 2012 2013 2014 2015 2016 2017 2018 2019 2020									
2021 2022 2023 2024 2025 2026 2027 2028 2029 2030										2031 2032 2033 2034 2035 2036 2037 2038 2039 2040										2041 2042 2043 2044 2045 2046 2047 2048 2049 2050									
2051 2052 2053 2054 2055 2056 2057 2058 2059 2060										2061 2062 2063 2064 2065 2066 2067 2068 2069 2070										2071 2072 2073 2074 2075 2076 2077 2078 2079 2080									
2081 2082 2083 2084 2085 2086 2087 2088 2089 2090										2091 2092 2093 2094 2095 2096 2097 2098 2099 2100										2101 2102 2103 2104 2105 2106 2107 2108 2109 2110									
2111 2112 2113 2114 2115 2116 2117 2118 2119 2120										2121 2122 2123 2124 2125 2126 2127 2128 2129 2130										2131 2132 2133 2134 2135 2136 2137 2138 2139 2140									
2141 2142 2143 2144 2145 2146 2147 2148 2149 2150										2151 2152 2153 2154 2155 2156 2157 2158 2159 2160										2161 2162 2163 2164 2165 2166 2167 2168 2169 2170									

M *10*

PRECIPITATION OF Tm WITH BENZENEACETIC ACID. V. I. Kuznetsov (Zhur. Priklad. Khimii (J. Applied Chem.), 1940, 13, 1613-1616; C. 762, 1941, 23, 3022). (In Russian.) Benzeneacetic acid (and other organic acids) precipitate Mn^{IV} (present as MnCl_2) quantitatively only with a high concentration of reagent, a low acidity, and in the absence of organic complex-forming substances. The precipitate is contaminated by many other ions present in the solution. In the form of $\text{Mn}_2(\text{C}_2\text{O}_4)_3 \cdot 4\text{H}_2\text{O}$, Mn^{IV} is completely precipitated in the presence of considerable acid and organic compounds.

ASB SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSED AND PROPOSED FOR

11

Small Quantitative Microchemical Determination of small Amounts of Tin with Anthraquinone-1-one-4-dimethylammonium. V. I. Kuznetsov and I. M. Bender (Zhur. Priklad. Khimii (J. Applied Chem.), 1940, 13, 1724-1731; C. Abstr., 1941, 35, 3022).—[In Russian.] (Y. abstract above. Filter paper is impregnated with a warm solution of the reagent (HCl salt) 0.2, NH₄Cl 30 grm., HCl (sp. gr. 1.12) 4, water 125, and alcohol 60 c.c., dried in air, and stored in a covered container protected from light. A drop of SnCl₄ in HCl forms a blue-violet spot on this paper. A visual comparison of the colour intensity serves for evaluating up to 1 γ Sn.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

12000 12100000	120000 121000 122000 123000 124000 125000 126000 127000 128000 129000	130000 131000 132000 133000 134000 135000 136000 137000 138000 139000	140000 141000 142000 143000 144000 145000 146000 147000 148000 149000	150000 151000 152000 153000 154000 155000 156000 157000 158000 159000	160000 161000 162000 163000 164000 165000 166000 167000 168000 169000	170000 171000 172000 173000 174000 175000 176000 177000 178000 179000	180000 181000 182000 183000 184000 185000 186000 187000 188000 189000	190000 191000 192000 193000 194000 195000 196000 197000 198000 199000	200000 201000 202000 203000 204000 205000 206000 207000 208000 209000	210000 211000 212000 213000 214000 215000 216000 217000 218000 219000	220000 221000 222000 223000 224000 225000 226000 227000 228000 229000	230000 231000 232000 233000 234000 235000 236000 237000 238000 239000	240000 241000 242000 243000 244000 245000 246000 247000 248000 249000	250000 251000 252000 253000 254000 255000 256000 257000 258000 259000	260000 261000 262000 263000 264000 265000 266000 267000 268000 269000	270000 271000 272000 273000 274000 275000 276000 277000 278000 279000	280000 281000 282000 283000 284000 285000 286000 287000 288000 289000	290000 291000 292000 293000 294000 295000 296000 297000 298000 299000	300000 301000 302000 303000 304000 305000 306000 307000 308000 309000	310000 311000 312000 313000 314000 315000 316000 317000 318000 319000	320000 321000 322000 323000 324000 325000 326000 327000 328000 329000	330000 331000 332000 333000 334000 335000 336000 337000 338000 339000	340000 341000 342000 343000 344000 345000 346000 347000 348000 349000	350000 351000 352000 353000 354000 355000 356000 357000 358000 359000	360000 361000 362000 363000 364000 365000 366000 367000 368000 369000	370000 371000 372000 373000 374000 375000 376000 377000 378000 379000	380000 381000 382000 383000 384000 385000 386000 387000 388000 389000	390000 391000 392000 393000 394000 395000 396000 397000 398000 399000	400000 401000 402000 403000 404000 405000 406000 407000 408000 409000	410000 411000 412000 413000 414000 415000 416000 417000 418000 419000	420000 421000 422000 423000 424000 425000 426000 427000 428000 429000	430000 431000 432000 433000 434000 435000 436000 437000 438000 439000	440000 441000 442000 443000 444000 445000 446000 447000 448000 449000	450000 451000 452000 453000 454000 455000 456000 457000 458000 459000	460000 461000 462000 463000 464000 465000 466000 467000 468000 469000	470000 471000 472000 473000 474000 475000 476000 477000 478000 479000	480000 481000 482000 483000 484000 485000 486000 487000 488000 489000	490000 491000 492000 493000 494000 495000 496000 497000 498000 499000	500000 501000 502000 503000 504000 505000 506000 507000 508000 509000	510000 511000 512000 513000 514000 515000 516000 517000 518000 519000	520000 521000 522000 523000 524000 525000 526000 527000 528000 529000	530000 531000 532000 533000 534000 535000 536000 537000 538000 539000	540000 541000 542000 543000 544000 545000 546000 547000 548000 549000	550000 551000 552000 553000 554000 555000 556000 557000 558000 559000	560000 561000 562000 563000 564000 565000 566000 567000 568000 569000	570000 571000 572000 573000 574000 575000 576000 577000 578000 579000	580000 581000 582000 583000 584000 585000 586000 587000 588000 589000	590000 591000 592000 593000 594000 595000 596000 597000 598000 599000	600000 601000 602000 603000 604000 605000 606000 607000 608000 609000	610000 611000 612000 613000 614000 615000 616000 617000 618000 619000	620000 621000 622000 623000 624000 625000 626000 627000 628000 629000	630000 631000 632000 633000 634000 635000 636000 637000 638000 639000	640000 641000 642000 643000 644000 645000 646000 647000 648000 649000	650000 651000 652000 653000 654000 655000 656000 657000 658000 659000	660000 661000 662000 663000 664000 665000 666000 667000 668000 669000	670000 671000 672000 673000 674000 675000 676000 677000 678000 679000	680000 681000 682000 683000 684000 685000 686000 687000 688000 689000	690000 691000 692000 693000 694000 695000 696000 697000 698000 699000	700000 701000 702000 703000 704000 705000 706000 707000 708000 709000	710000 711000 712000 713000 714000 715000 716000 717000 718000 719000	720000 721000 722000 723000 724000 725000 726000 727000 728000 729000	730000 731000 732000 733000 734000 735000 736000 737000 738000 739000	740000 741000 742000 743000 744000 745000 746000 747000 748000 749000	750000 751000 752000 753000 754000 755000 756000 757000 758000 759000	760000 761000 762000 763000 764000 765000 766000 767000 768000 769000	770000 771000 772000 773000 774000 775000 776000 777000 778000 779000	780000 781000 782000 783000 784000 785000 786000 787000 788000 789000	790000 791000 792000 793000 794000 795000 796000 797000 798000 799000	800000 801000 802000 803000 804000 805000 806000 807000 808000 809000	810000 811000 812000 813000 814000 815000 816000 817000 818000 819000	820000 821000 822000 823000 824000 825000 826000 827000 828000 829000	830000 831000 832000 833000 834000 835000 836000 837000 838000 839000	840000 841000 842000 843000 844000 845000 846000 847000 848000 849000	850000 851000 852000 853000 854000 855000 856000 857000 858000 859000	860000 861000 862000 863000 864000 865000 866000 867000 868000 869000	870000 871000 872000 873000 874000 875000 876000 877000 878000 879000	880000 881000 882000 883000 884000 885000 886000 887000 888000 889000	890000 891000 892000 893000 894000 895000 896000 897000 898000 899000	900000 901000 902000 903000 904000 905000 906000 907000 908000 909000	910000 911000 912000 913000 914000 915000 916000 917000 918000 919000	920000 921000 922000 923000 924000 925000 926000 927000 928000 929000	930000 931000 932000 933000 934000 935000 936000 937000 938000 939000	940000 941000 942000 943000 944000 945000 946000 947000 948000 949000	950000 951000 952000 953000 954000 955000 956000 957000 958000 959000	960000 961000 962000 963000 964000 965000 966000 967000 968000 969000	970000 971000 972000 973000 974000 975000 976000 977000 978000 979000	980000 981000 982000 983000 984000 985000 986000 987000 988000 989000	990000 991000 992000 993000 994000 995000 996000 997000 998000 999000	1000000 1001000 1002000 1003000 1004000 1005000 1006000 1007000 1008000 1009000
----------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Colour reactions for thorium, uranium, and other elements. V. I. Kurnetsov (*Compt. rend. Acad. Sci. U.S.S.R.*, 1941, 81, 898-900). The effect of various groupings on the production of coloured compounds with sp. elements, thus providing colour tests for these elements, is discussed. The colours produced by some aromatic acids of hydroxyazo compounds with rare earths, Th, Zr, Sn, Th, Nb, Ta, and U are given. By adjustment of pH it is possible to increase the specificity of the reaction. The presence of AsH_3 acts to the azo-group is essential for the production of colour. The sensitivity in the case of Th or U is sufficient to give a colour change with solutions of 1 ppm.

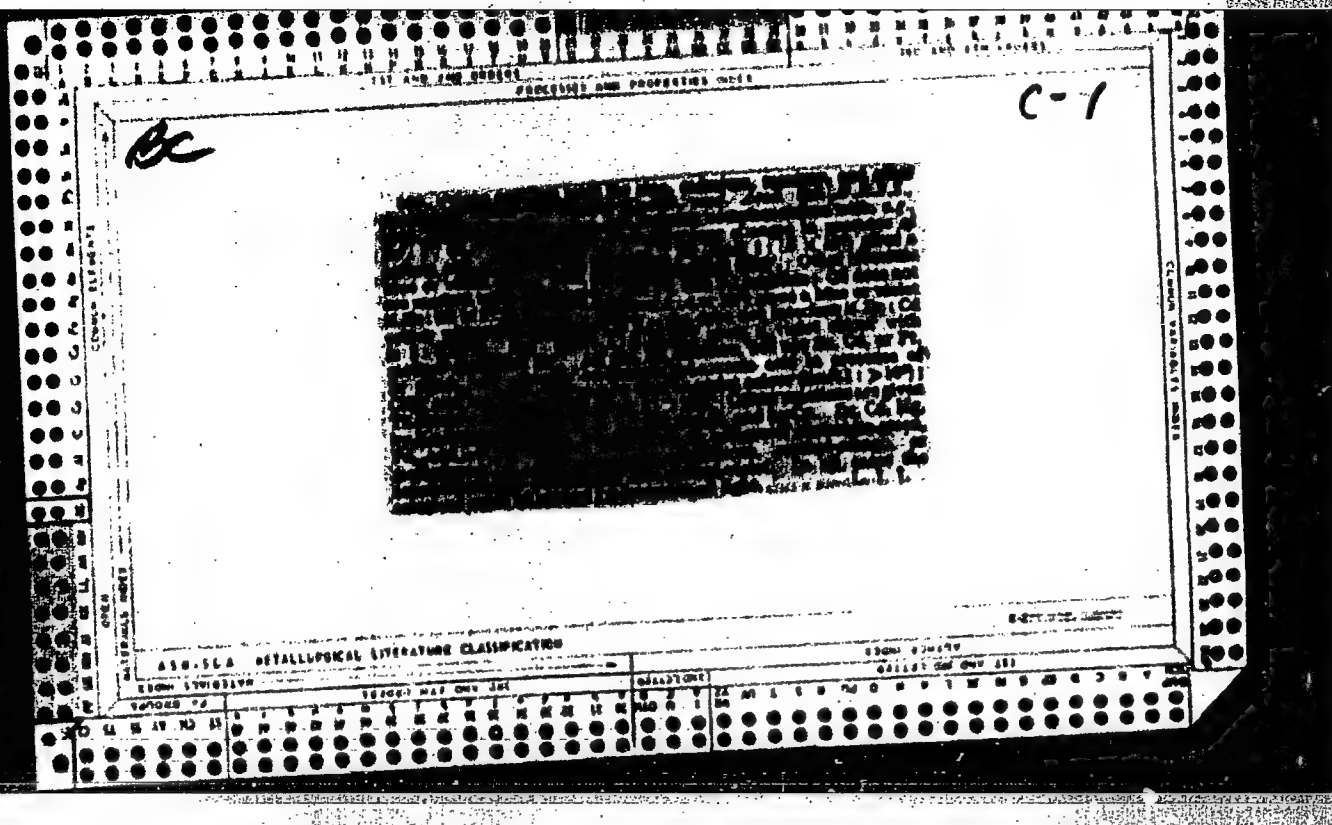
A. J. M.

On Colour Reactions for the Detection of Antimony, Gallium, and Other Elements. V. I. Kuznetsov. (Compt. rend. (Doklady) Acad. Sci. U.S.S.R., 1941, 33, 45-47; *Tr. Akad. Nauk*, 1942, 37, 1943).—[In German.] Suitable colour reactions are tabulated for Sb^{III} , Bi^{III} , Al , Ca , Mg , Pb^{II} , Ti^{IV} , Zr , Th , and Mn^{IV} with 4-nitrophenol, 4-nitrophenylpyrocatechol, alizarin, the p -disodium compound of phenolsulphonic acid and pyrocatechol, and the p -disodium compound of phenolsulphonic acid and α -dihydroxynaphthalene. In each of these fifty systems, the colour of the respective metal phenolate is given for solutions of 0.1N., 0.5N., and N-HCl.

Analytic Chem. Lab.,
Inst. Mineral Raw Materials, Moscow

Exhaustive action of individual organosulfonium compounds on 2-furyl add. V. J. Kozlovskiy, J. Gen. Chem. (U. S. S. R.), 12, 631-7 (1942) (English summary).
PrMgI (from 9 g. Mg) in 180 g. dry xylene (prep. by the use of 10 drops of Me₂NPh as catalyst, in the absence of ether) was treated at the b. p. of the solvent with 12 g. pyromucic acid in 100 g. hot xylene to yield 14 g. 2-furyl ketone, b. 108-100°, diisopropyl (2-furyl)carbinol, b. 146-8°, and *iso*-C₁₁H₁₇CHCH₂COOC₂H₅, b. 161-3°. Mg (9 g.), 90 g. *iso*-BuI and 10 drops Me₂NPh were used to prep. the Orignard reagent in 180 g. xylene; this was treated as above with 12 g. pyromucic acid in 100 g. xylene to yield isobutyl 2-furyl ketone, b. 30-10°, diisobutyl (2-furyl)carbinol, b. 187-9°, and *iso*-C₁₁H₁₇CH₂CHCH₂COOC₂H₅, b. 170-3°. *iso*-AmMgI (from 9 g. Mg) in 180 g. xylene was reacted as above with 12 g. pyromucic acid in 100 g. xylene to yield isononyl 2-furyl ketone, b. 96-100°, isononyl (2-furyl)methane, b. 128-30° m. 49°, diisononyl (2-furyl)carbinol, b. 105-6°, and *iso*-C₁₁H₁₇CH₂CHCH₂COOC₂H₅, b. 178-80°. Apparently the reaction proceeds through formation of alkoxides of alkylfurylmethylene glycols, followed by formation of alkoxides of dialkylfurylcarbinols and trialkylfurylmethanes; the latter probably result from direct reduction of acids to hydrocarbons. Further action results in splitting of the cyclic into the unsatd. diketones. G. M. Kozlovskiy

ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION



CLASSIFICATION		DETAILS		AUTHORITY	
CLASS	DETAILS	CLASS	DETAILS	CLASS	DETAILS
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102
103	104	105	106	107	108
109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
139	140	141	142	143	144
145	146	147	148	149	150
151	152	153	154	155	156
157	158	159	160	161	162
163	164	165	166	167	168
169	170	171	172	173	174
175	176	177	178	179	180
181	182	183	184	185	186
187	188	189	190	191	192
193	194	195	196	197	198
199	200	201	202	203	204
205	206	207	208	209	210
211	212	213	214	215	216
217	218	219	220	221	222
223	224	225	226	227	228
229	230	231	232	233	234
235	236	237	238	239	240
241	242	243	244	245	246
247	248	249	250	251	252
253	254	255	256	257	258
259	260	261	262	263	264
265	266	267	268	269	270
271	272	273	274	275	276
277	278	279	280	281	282
283	284	285	286	287	288
289	290	291	292	293	294
295	296	297	298	299	300
301	302	303	304	305	306
307	308	309	310	311	312
313	314	315	316	317	318
319	320	321	322	323	324
325	326	327	328	329	330
331	332	333	334	335	336
337	338	339	340	341	342
343	344	345	346	347	348
349	350	351	352	353	354
355	356	357	358	359	360
361	362	363	364	365	366
367	368	369	370	371	372
373	374	375	376	377	378
379	380	381	382	383	384
385	386	387	388	389	390
391	392	393	394	395	396
397	398	399	400	401	402
403	404	405	406	407	408
409	410	411	412	413	414
415	416	417	418	419	420
421	422	423	424	425	426
427	428	429	430	431	432
433	434	435	436	437	438
439	440	441	442	443	444
445	446	447	448	449	450
451	452	453	454	455	456
457	458	459	460	461	462
463	464	465	466	467	468
469	470	471	472	473	474
475	476	477	478	479	480
481	482	483	484	485	486
487	488	489	490	491	492
493	494	495	496	497	498
499	500	501	502	503	504
505	506	507	508	509	510
511	512	513	514	515	516
517	518	519	520	521	522
523	524	525	526	527	528
529	530	531	532	533	534
535	536	537	538	539	540
541	542	543	544	545	546
547	548	549	550	551	552
553	554	555	556	557	558
559	560	561	562	563	564
565	566	567	568	569	570
571	572	573	574	575	576
577	578	579	580	581	582
583	584	585	586	587	588
589	590	591	592	593	594
595	596	597	598	599	600
601	602	603	604	605	606
607	608	609	610	611	612
613	614	615	616	617	618
619	620	621	622	623	624
625	626	627	628	629	630
631	632	633	634	635	636
637	638	639	640	641	642
643	644	645	646	647	648
649	650	651	652	653	654
655	656	657	658	659	660
661	662	663	664	665	666
667	668	669	670	671	672
673	674	675	676	677	678
679	680	681	682	683	684
685	686	687	688	689	690
691	692	693	694	695	696
697	698	699	700	701	702
703	704	705	706	707	708
709	710	711	712	713	714
715	716	717	718	719	720
721	722	723	724	725	726
727	728	729	730	731	732
733	734	735	736	737	738
739	740	741	742	743	744
745	746	747	748	749	750
751	752	753	754	755	756
757	758	759	760	761	762
763	764	765	766	767	768
769	770	771	772	773	774
775	776	777	778	779	780
781	782	783	784	785	786
787	788	789	790	791	792
793	794	795	796	797	798
799	800	801	802	803	804
805	806	807	808	809	810
811	812	813	814	815	816
817	818	819	820	821	822
823	824	825	826	827	828
829	830	831	832	833	834
835	836	837	838	839	840
841	842	843	844	845	846
847	848	849	850	851	852
853	854	855	856	857	858
859	860	861	862	863	864
865	866	867	868	869	870
871	872	873	874	875	876
877	878	879	880	881	882
883	884	885	886	887	888
889	890	891	892	893	894
895	896	897	898	899	900
901	902	903	904	905	906
907	908	909	910	911	912
913	914	915	916	917	918
919	920	921	922	923	924
925	926	927	928	929	930
931	932	933	934	935	936
937	938	939	940	941	942
943	944	945	946	947	948
949	950	951	952	953	954
955	956	957	958	959	960
961	962	963	964	965	966
967	968	969	970	971	972
973	974	975	976	977	978
979	980	981	982	983	984
985	986	987	988	989	990
991	992	993	994	995	996
997	998	999	1000	1001	1002
1003	1004	1005	1006	1007	1008
1009	1010	1011	1012	1013	1014
1015	1016	1017	1018	1019	1020
1021	1022	1023	1024	1025	1026
1027	1028	1029	1030	1031	1032
1033	1034	1035	1036	1037	1038
1039	1040	1041	1042	1043	1044
1045	1046	1047	1048	1049	1050
1051	1052	1053	1054	1055	1056
1057	1058	1059	1060	1061	1062
1063	1064	1065	1066	1067	1068
1069	1070	1071	1072	1073	1074
1075	1076	1077	1078	1079	1080
1081	1082	1083	1084	1085	1086
1087	1088	1089	1090	1091	1092
1093	1094	1095	1096	1097	1098
1099	1100	1101	1102	1103	1104
1105	1106	1107	1108	1109	1110
1111	1112	1113	1114	1115	1116
1117	1118	1119	1120	1121	1122
1123	1124	1125	1126	1127	1128
1129	1130	1131	1132	1133	1134
1135	1136	1137	1138	1139	1140
1141	1142	1143	1144	1145	1146
1147	1148	1149	1150	1151	1152
1153	1154	1155	1156	1157	1158
1159	1160	1161	1162	1163	1164
1165	1166	1167	1168	1169	1170
1171	1172	1173	1174	1175	1176
1177	1178	1179	1180	1181	1182
1183	1184	1185	1186		

<p>1. Color reaction for cerium: M. L. Kramers (J. Gen. Chem. Soc., 1944, 14, 581-583). In solution of ceric salt cerium gives a bright yellow solution or ppt. with salicylaldehyde. The reaction is: $Ce^{4+} + C_6H_5CHO \rightarrow Ce^{3+} + C_6H_5COOH$. The reaction is most easily prepared as required in the test solution. It is suitable for the detection and estimation determination of Ce and Th in presence of most other elements and of Th in presence of Ce. The test is carried out as follows: To the solution under test (containing 1 drop of dilute acetic acid per ml.) are added several drops of salicylaldehyde solution (10% in alcohol); the mixture is shaken, and then treated with a few drops of p-aminophenylarsonic acid solution (1% in water). In presence of Ce (forming concn. 1:1,000,000) a bright yellow colour or ppt. results. In its absence the solution remains colourless or very faintly yellow. Too great an excess of reagent causes ppt. of (1) in pale yellow crystals after a few min. Interference is caused by (2) describes cerium compounds which form complexes with Ce, (3) NH_4OH and other compounds which react with aldehydes, (4) Zr, Hf, Th, U, Pa, giving bright yellow colours or ppt., (5) Zr, Hf, Th, U, Pa, giving light yellow ppt., (6) Fe (but not Fe^{2+} except through oxidation), giving an exceedingly sensitive pale orange-brown colour or ppt., (7) V giving a brownish-yellow colour, and (8) Pd which gives with salicylaldehyde alone a yellow colour. Bivalent elements do not interfere. One part of Ce may be detected in presence of 5000 parts of total rare earths, 1000 parts of Y, > 3000 parts of Al, 1000 parts of Ca, or 60 parts of Ga. Zr, Hf, and Ti do not interfere. Neither salicylaldehyde-p-aminophenylarsonic acid nor p-aminophenylarsonic acid gives a colour reaction with Ce; hence it is concluded that the proximity of OH and AsO_3H_2 as in (1), is essential and that colour develops through the formation in the mol. of a new cycle containing a metal atom (multivalent) joined to both these salt-forming groups. Furthermore, with similar metals, the greater is the at. wt. of the metal, the stronger is the colour: e.g., with equiv. concns. of Zr and Hf, Hf gives a much brighter yellow than Zr. The isolation of (1) is described: p-aminophenylarsonic acid (1.5 g.) dissolved in water (100 ml.) is added to salicylaldehyde (2-4 g.) and the mixture stirred vigorously to give, after a few min., light yellow needles of (1), m.p. 84° (decolor. at 211°), sol. in alcohol and in hot water, almost insol. in cold water. C. S. S.</p>		<p>Properties used</p> <p>C 1</p>
<p>2. Color reaction for cerium: M. L. Kramers (J. Gen. Chem. Soc., 1944, 14, 581-583). In solution of ceric salt cerium gives a bright yellow solution or ppt. with salicylaldehyde. The reaction is: $Ce^{4+} + C_6H_5CHO \rightarrow Ce^{3+} + C_6H_5COOH$. The reaction is most easily prepared as required in the test solution. It is suitable for the detection and estimation determination of Ce and Th in presence of most other elements and of Th in presence of Ce. The test is carried out as follows: To the solution under test (containing 1 drop of dilute acetic acid per ml.) are added several drops of salicylaldehyde solution (10% in alcohol); the mixture is shaken, and then treated with a few drops of p-aminophenylarsonic acid solution (1% in water). In presence of Ce (forming concn. 1:1,000,000) a bright yellow colour or ppt. results. In its absence the solution remains colourless or very faintly yellow. Too great an excess of reagent causes ppt. of (1) in pale yellow crystals after a few min. Interference is caused by (2) describes cerium compounds which form complexes with Ce, (3) NH_4OH and other compounds which react with aldehydes, (4) Zr, Hf, Th, U, Pa, giving bright yellow colours or ppt., (5) Zr, Hf, Th, U, Pa, giving light yellow ppt., (6) Fe (but not Fe^{2+} except through oxidation), giving an exceedingly sensitive pale orange-brown colour or ppt., (7) V giving a brownish-yellow colour, and (8) Pd which gives with salicylaldehyde alone a yellow colour. Bivalent elements do not interfere. One part of Ce may be detected in presence of 5000 parts of total rare earths, 1000 parts of Y, > 3000 parts of Al, 1000 parts of Ca, or 60 parts of Ga. Zr, Hf, and Ti do not interfere. Neither salicylaldehyde-p-aminophenylarsonic acid nor p-aminophenylarsonic acid gives a colour reaction with Ce; hence it is concluded that the proximity of OH and AsO_3H_2 as in (1), is essential and that colour develops through the formation in the mol. of a new cycle containing a metal atom (multivalent) joined to both these salt-forming groups. Furthermore, with similar metals, the greater is the at. wt. of the metal, the stronger is the colour: e.g., with equiv. concns. of Zr and Hf, Hf gives a much brighter yellow than Zr. The isolation of (1) is described: p-aminophenylarsonic acid (1.5 g.) dissolved in water (100 ml.) is added to salicylaldehyde (2-4 g.) and the mixture stirred vigorously to give, after a few min., light yellow needles of (1), m.p. 84° (decolor. at 211°), sol. in alcohol and in hot water, almost insol. in cold water. C. S. S.</p>		<p>Properties used</p> <p>C 1</p>
<p>3. Color reaction for cerium: M. L. Kramers (J. Gen. Chem. Soc., 1944, 14, 581-583). In solution of ceric salt cerium gives a bright yellow solution or ppt. with salicylaldehyde. The reaction is: $Ce^{4+} + C_6H_5CHO \rightarrow Ce^{3+} + C_6H_5COOH$. The reaction is most easily prepared as required in the test solution. It is suitable for the detection and estimation determination of Ce and Th in presence of most other elements and of Th in presence of Ce. The test is carried out as follows: To the solution under test (containing 1 drop of dilute acetic acid per ml.) are added several drops of salicylaldehyde solution (10% in alcohol); the mixture is shaken, and then treated with a few drops of p-aminophenylarsonic acid solution (1% in water). In presence of Ce (forming concn. 1:1,000,000) a bright yellow colour or ppt. results. In its absence the solution remains colourless or very faintly yellow. Too great an excess of reagent causes ppt. of (1) in pale yellow crystals after a few min. Interference is caused by (2) describes cerium compounds which form complexes with Ce, (3) NH_4OH and other compounds which react with aldehydes, (4) Zr, Hf, Th, U, Pa, giving bright yellow colours or ppt., (5) Zr, Hf, Th, U, Pa, giving light yellow ppt., (6) Fe (but not Fe^{2+} except through oxidation), giving an exceedingly sensitive pale orange-brown colour or ppt., (7) V giving a brownish-yellow colour, and (8) Pd which gives with salicylaldehyde alone a yellow colour. Bivalent elements do not interfere. One part of Ce may be detected in presence of 5000 parts of total rare earths, 1000 parts of Y, > 3000 parts of Al, 1000 parts of Ca, or 60 parts of Ga. Zr, Hf, and Ti do not interfere. Neither salicylaldehyde-p-aminophenylarsonic acid nor p-aminophenylarsonic acid gives a colour reaction with Ce; hence it is concluded that the proximity of OH and AsO_3H_2 as in (1), is essential and that colour develops through the formation in the mol. of a new cycle containing a metal atom (multivalent) joined to both these salt-forming groups. Furthermore, with similar metals, the greater is the at. wt. of the metal, the stronger is the colour: e.g., with equiv. concns. of Zr and Hf, Hf gives a much brighter yellow than Zr. The isolation of (1) is described: p-aminophenylarsonic acid (1.5 g.) dissolved in water (100 ml.) is added to salicylaldehyde (2-4 g.) and the mixture stirred vigorously to give, after a few min., light yellow needles of (1), m.p. 84° (decolor. at 211°), sol. in alcohol and in hot water, almost insol. in cold water. C. S. S.</p>		<p>Properties used</p> <p>C 1</p>

BC

1866. Colour reaction for quadrivalent titanium in presence of benzoyl benzoate. V. J. Rosenbaum (*J. Gen. Chem.*, 1944, 14, 994-995). Reduction by Zn dust of the brownish-red solution formed in slightly acid solution by Ti^{+++} and chromotropic acid (I) gives a completely colorless solution which, on oxidation by air, gradually reddens and finally assumes a colour as intense as before. (II) gives no colour with Ti^{+++} and, hence, is a reagent for Ti^{+++} and not for Ti^{++} ; thus resembling pyrometachrome (III) (cf. Rosenbaum et al., A., 1951, 446). In neutral solution (II) or (III) gives a yellow colour with Ti^{++} , although it is less intense than that with Ti^{+++} . The colour reaction in slightly acid solution allows traces of Ti^{+++} to be detected in presence of large quantities of Ti^{++} . In particular, it may be used for indicating the degree of reduction obtained in a Jones reductor. (II) may be added to the Ti^{+++} solution before reduction and the resulting liquid examined for colour, which, if present, may show that the acidity of the solution requires adjustment.

G. S. E.

ABO-ILA METALLURGICAL LITERATURE CLASSIFICATION

FROM SYNDICATE

100000 04 100000 HIT ONE TEN

EXISTENCE

EXIST ON ONE ONE

197 AND 190 (1961) PROCESSES AND PROPERTIES INDEX

7

CSA

Color reaction of thorium. I. V. I. Kuznetsov. *J. Gen. Chem. (U.S.S.R.)* 14, 1014-19 (1944) (English summary).—1-(*o*-Aminophenylazo)-2-naphthol-3,6-disulfonic acid serves to detect Th in the presence of rare earths and other elements by the formation of a strawberry-red ppt. Th gives an indistinct orange-red color, Zr interferes somewhat, and Fe⁺⁺⁺ interferes if present in more than 100:300 ratio. The reagent is produced by coupling *o*-aminobenzenesulfonic acid in dil. HCl with the Na salt of 2-naphthol-3,6-disulfonic acid. Diazo coupling of *o*-aminobenzenesulfonic acid with 2-naphthol-6-sulfonic acid and with 2-naphthol-6,8-disulfonic acid yields products which also give analogous color reaction, but are not so effective as the above reagent. G. M. Kowalepoff

NOB. 9-10

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

197000 170000 180000 190000 200000 210000 220000 230000 240000 250000 260000 270000 280000 290000 300000 310000 320000 330000 340000 350000 360000 370000 380000 390000 400000 410000 420000 430000 440000 450000 460000 470000 480000 490000 500000 510000 520000 530000 540000 550000 560000 570000 580000 590000 600000 610000 620000 630000 640000 650000 660000 670000 680000 690000 700000 710000 720000 730000 740000 750000 760000 770000 780000 790000 800000 810000 820000 830000 840000 850000 860000 870000 880000 890000 900000 910000 920000 930000 940000 950000 960000 970000 980000 990000

The use of 1-anthraquinonecarboxylic acid in the determination of small quantities of tin. V. J. Kuznetsov, *Zashchita Lab.* 11, 263-6 (1948). To det. small quantities of Sn in the presence of large quantities of W, Mo, Cu, Cr, Mn, V, Pb, etc., add 10-20 ml. of satd. aq. soln. of NH_4I , 1-anthraquinonecarboxylic acid (approx. 1%) and 1 ml. of 1% soln. of Na_2WO_4 to each 100 ml. of alk. soln. of Sn (contg. no chlorides, neutralize approx. with HNO_3 free of chlorides), add an aq. quantity of HNO_3 equal to $1/10$ of the vol. formed, heat for 1.0-1.5 hrs. on a water bath, filter and wash with acidified 3% NH_4NO_3 . Place the dried ppt. and the filter in a high 50-ml. crucible, add a mixt. of 3 ml. concd. H_2SO_4 + 1 ml. of concd. HNO_3 , cover with a watch glass with an opening in the center, and heat on a sand bath. After the evolution of brown vapors and darkening of the contents of the crucible, add a drop of concd. HNO_3 (by means of a long capillary) or several crystals of NH_4NO_3 . Repeat until the contents of the crucible do not darken on heating, and increase the heating until SO_2 vapors appear. Place a very small drop of the soln. on a watch glass, add 2 drops of 2% HCl satd. with NaCl and place a drop of the mixt. obtained on a piece of 1-(p-dimethylaminophenyl)isoanthraquinone ("Anthrasol") reagent paper. Appearance of a blue-violet spot indicates the presence of Sn in quantities that can be detd. iodometrically. If no spot is formed, evaporate the H_2SO_4 almost to dryness, add 1 ml. of 2% HCl satd. with NaCl , filter if necessary, and det. Sn by the method previously described (C.A. 33, 3923). In the iodometric detn. decompose the antrosulfuric acid which may be present by adding to the crucible several crystals of $\text{K}_2\text{Cr}_2\text{O}_7$, heat, cool, add 2-3 ml. of HCl (d. 1.12) and 2-3 ml. of 2% HCl satd. with NaCl . Filter, wash slightly with 2% HCl satd. with NaCl . Carry out the reduction and titration in a 50-ml. conical flask equipped with a small Kontar.

Heckel valve. Add 2 drops of a mixt. of 10% CoCl_2 and NiCl_2 solns., 5 drops of 20% KI and a shaving of metallic Al (0.2-0.3 g.). Titrate the Sn^{2+} with 0.01 N I_2 soln. A modified method for the synthesis of anthraquinonecarboxylic acid is described. Six references. W. R. Henn

CA 7

ORGANIC PRECIPITANTS. I. Precipitants for elements of the first, second, and third groups. V. I. Kurpulyay, Zavoiskaya Lab. 11, 636-71 (1945). - A review with 1.6 references. W. R. Henn

CHEM. AB., VOL. 40, NO. 10, 20 May 46

1ST AND 2ND VALUES																										PROCESS AND PROPERTIES INDEX																									
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26																										A B C D E F G H I J K L M N O P Q R S T U V W X Y Z																									
<div style="position: relative; height: 100px;"> M 11 <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); text-align: center;"> <p>*A Modified Contact-Göckel Valve for Iodometric Determination of Tin. V. I. Kuznetsov (Zavod. Lab., 1945, 11, 743-745; C. Abstr., 1946, 40, 3363). (In Russian). In the modified Contact-Göckel valve described, no large excess of HClO_4 is drawn into the flask. The excess Cl_2 formed is not liberated into the atmosphere but fills the flask, no losses of Cl_2 result during the operation of the valve, and there is no violent splattering when the HClO_4 solution is drawn into the flask, and this vol. is the smaller the higher the concentration of the solution. Accurate results are obtained in determining Sn with this valve.</p> </div> </div>																										<div style="text-align: center;"> <p>ASH-SLA DETALLURGICAL LITERATURE CLASSIFICATION</p> <p>8800 510 1110</p> <p>8800 510 1110</p> </div>																									
																										<div style="text-align: center;"> <p>8800 510 1110</p> <p>8800 510 1110</p> </div>																									

CA 7

Organic precipitants. II. Precipitants for elements of the fourth, fifth, sixth, seventh, and eighth groups... V. I. Kurnitskaya. Zaredskaya Lab. II, 768 K3(1945); cf. C.A. 40, 5757. A review with 187 references. W. R. Himm

ASB. 55A METALLURGICAL LITERATURE CLASSIFICATION

Color tests for aluminum. V. J. Kurnakov, *Doklady Akad. Nauk S.S.S.R.* 50, 277 (1948). The available literature is reviewed (10 references). New reagents are: β -(3,4-dihydroxyphenylazo)benzenesulfonic acid (I), corresponding 3,4-dihydroxy-1-naphthylazo deriv. (II), 4,6-dihydroxy-3-(*p*-sulphophenylazo)-2,7-naphthalenedisulfonic acid (III), and β -aminophenylazo analog of III (IV). I can detect Al in 1:20,000,000 diln. (5 cm. layer) giving an orange color, with interference by Cu, Co, Ti, Zr, Th, U, Fe^{III}, Zn, Pb, Mo^{VI}, W^{VI}, and Ni. II gives red-violet color detectable in 1:100,000,000 diln. (10 cm.) with interferences as in I. III gives red-violet color, detectable in 1:30,000,000 diln.; interference: Cu, Be, Co, Fe, Zr, Th, U, Fe^{III}, U^{VI}, Fe^{III}, Bi, and Ir. IV gives a blue color detectable in 1:4,000,000 diln.; interference: Be, Co, Fe, Zr, Th, U, Fe^{III}, U^{VI}. I and II permit detection of Al without the interference; II is superior; the acid test soln. is treated with the reagent and an excess of NaOAc. Al is detected in presence of Fe as follows: HCl soln. (weak) of unknown is warmed with NH₄CN until colorless, cooled, III is added, followed by urea until neutral to Congo red; with Al the color is violet; in its absence, brownish pink; detection of 10 γ Al in presence of 500 times excess of Fe is possible. With IV the above reduction should be

done with Na₂SO₃. Detection of Al in presence of rare earths: neutralize weak HCl test soln. to divided into 2 portions, one of which is treated with a few drops of 10% Na salicylate; both are treated with II (1 drop) and excess NaOAc; in presence of Al the salicylate-free portion gives violet or blue-pink color; in absence of Al, both are light pink; detection of 0.2 γ Al with 200 times as much rare earths is possible. Detection of Al in presence of Pb: to weakly acid test soln. add 1 drop IV, then 25% NaOAc dropwise until violet color is reached (and a slight excess), warm gently, let stand 2-3 min.; with Al, blue-violet or blue; without Al, red-violet; detection of 10 γ Al in presence of 10,000 times Pb is possible. For detection in presence of Ni:

treat the dil. HCl soln. with a drop of IV, add 25% urea-tropine soln. until a blue color results, warm gently or let stand 1 hr.; in the presence of Al, the clear soln. is blue-violet; in its absence, purple; detection of 5 γ Al in presence of 1000 times Ni is possible. G. M. Kozlov

CA

7

Increase of sharpness of color tests with organic reagents. V. I. Kuznetsov, *Doklady Akad. Nauk S.S.S.R.* 90, 231 (1945). The color formation in org. reagents is reviewed on the basis of the internal ionization in mol. contg. distinct dipole character. Known reagents are readily improved by increasing the dipole effect by the use of electrically "opposite" groups. Comparison of color tests with reagents having NH_2 , H , or NO_2 groups in comparable positions gives addnl. proof. 5-Nitrosalicylic acid in neutral (NaOAc soln.) gives a weak yellow color with Ti^{4+} and U^{6+} ; salicylic acid gives yellow and reddish brown, resp.; 5-amino analog gives brown-orange color. 6-(4-Nitro-2-sulphophenylazo)salicylic acid (I) similarly gives yellow color with Ti^{4+} , orange-yellow with Zr (in HCl), yellow with U^{6+} ; 6-(4-sulphophenylazo)salicylic acid gives yellow, orange, orange, resp.; the corresponding 4-amino deriv. of I gives deep yellow, lilac-brown, brown, resp. 4-Nitropyrocatechol gives orange-yellow color with Ti^{4+} (in NaOAc), yellow with Mo^{6+} (in HCl), red orange with U^{6+} (in NH_4OH), and same with U^{6+} ; pyrocatechol gives orange, orange, brown, and light-brown, resp.; 4-amino analog gives red-brown, brown (turns to blue-green), deep brown,

deep brown, resp. 3,4-(dihydroxyphenylazo)-4-nitro-2-benzenesulfonic acid gives: with Ti^{4+} (weak HCl) red-orange, with Cb (strongly HCl) yellow, Sn^{4+} (in HCl) orange, H (in weak HCl) orange-red, U^{6+} (in strong HCl) yellow, W^{6+} (weak AcOH) red-orange; 3,4-(dihydroxyphenylazo)-4-benzenesulfonic acid gives: red-orange, same, same, pink-orange, red-orange, orange; 6-(2,4-dihydroxyphenylazo)metanilic acid gives: bright lilac, blue-violet, blue, blue, violet, blue, resp. 4-Nitro-2-arsenophenylazo-2-naphthol-3,6-disulfonic acid gives red-orange with Th (in HCl) and orange-pink with U^{6+} (in NaOAc); reagent without the NO_2 gives strawberry-pink and orange-pink, resp.; reagent with 4- NH_2 group gives bright violet and blue-violet, resp. 2-Nitrobenzylidenethiodanine gives yellow color with Ag (in HNO_3), orange-yellow with Pb (in NaOH) and same with Pb (in HNO_3); without the NO_2 group the colors are: yellow, yellow,

orange-yellow; with 3- NH_2 group they are red-brown, red-orange, and red-brown, resp. In neutral soln. $\text{N}_2\text{C}_6\text{H}_5\text{SNa}$ gives yellow color with Cu ; EtOCS_2Na gives yellow; $\text{Me}_2\text{NCS}_2\text{Na}$ gives deep brown. G. M. K.

[illegible]

CA

7

Color test for tellurium. *N. L. Kuznetsov, Zhur.*
Izd. Akad. S. S. S. R. 1950 62(1010). The test is based on the
 blue-violet color developed by action of quadrivalent
 Te on anthraquinone-1,8-dio-4-dimethylamine.
 The reaction takes place in conc. strongly acidic with HCl
 and is carried out by the drop method. Sat. blue paper
 with a solution of the reagent. Transfer a drop of test solution
 onto the paper, dry slightly, and add a drop of HCl (6
 12 N). By this method 0.0001 g of Te can be detected
 in the presence of HCl. Se does not give the color reaction
 and Te can be detected in a Te:Se ratio of 1:15,000.
 Under these conditions hexavalent U produces a bright
 blue color, trivalent Au and Fe, Ga, neutral Mo and
 W, and Al when in large quantity give blue to red-blue
 color. Bi gives a color similar to Te but at a much lower
 acidity. Sb, Sn, Hg, and Pb give colors similar to Te
 and should be removed. To test a mineral, moisten a
 reagent-sat. paper with aqua regia and press against the
 mineral. The presence of Te is indicated by the color.
 In the presence of Bi and Hg, moisten the reaction paper
 with 1% N HNO₃, press to the mineral, dry, and wet
 with 10% HCl. *St. Hosh.*

All-Union Sci. Res. Inst. Econ. Min., Moscow

Columetric determination of iron with sulfosalicylic acid. V. I. Kuznetsov, Zhurnal Anal. Khim., 12, 325 (1946). From weakly acidic media, containing no more than 0.1 mg. of Fe., add 1 ml. of sulfosalicylic acid soln. (10 g. of sulfosalicylic acid add approx. 15-20 ml. of acryene and a sufficient quantity of water to bring the vol. to 100 ml.) and an alkali, 1 ml. for each 5 mg. of Al and 0.5 ml. for each 5 mg. of Fe. Add 0.5 ml. of 0.5 N HCl + 3.5-5.0 ml. of 0.5 N NaOH. The color is stable for 15-20 min. The color is identical, then a small excess, being the vol. to 5-10 ml., and compare the color with that of a color made up of the same vol. of the same acid. If, under identical pH conditions, the color of the sample acid, has a more reddish tint than that of the color made containing an identical quantity of

the reagent), add enough of the reagent to the sample solution to equalize the color with that of the color made. Add NaOH solution, if green color, are formed (Cu). The amounts of Fe can be determined, even in the presence of large quantities of Mn, Al, Cu, Li, and of small quantities of compounds of Fe can be made degree of adding "other hydrolysis groups" to the reagent. For example, $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ hydrolyzes to form $\text{Fe}(\text{OH})_3$ and H_2SO_4 and forms a brown compound with Fe in $\text{Fe}(\text{OH})_3$ solution. This makes visual colorimetric easier. Brown color.

W. H. H.

KUZNETSOV, V. I.

Exhaustive action of individual organomagnesium compounds with furfuryl alcohol. V. I. Kuznetsov (Saratov Auto Inst.). *J. Gen. Chem. (U.S.S.R.)* 16, 187-92 (1946). The reactions of individual organomagnesium compds. with furfuryl alc. (I) result in reduction of the alc. with replacement of the OH by the radical of the particular Grignard reagent used. Further action in hot xylene leads to cleavage of the ring. In reactions in xylene the soln. was cooled with ice and slowly treated with cooled I to prevent tar formation; the 2nd phase of the reaction was conducted in refluxing xylene for 8 hrs. To PrMgI (from 65 g. PrI) there was added 6 g. I to yield 2-butylfuran, b. 100-2°, d₄²⁰ 0.8970, and 4-octen-1-ol-2-one, b₁₁ 70-2°, d₄²⁰ 0.8178. Analogously, iso-BuMgI (from 70 g. iso-BuI) and 6 g. I gave 2-amylfuran, b. 100-71°, d₄²⁰ 0.8990, and 4-nonen-1-ol-2-one, b₁₁ 82-4°, d₄²⁰ 0.9200. A similar reaction with iso-AmMgI gave 2-hexylfuran, b₁₁ 78-8°, d₄²⁰ 0.9014, and 1-decen-1-ol-2-one, b₁₁ 90-8°, d₄²⁰ 0.9251. (G. M. K.

Br. Ch.

C-1. Inorganic, Pure & Applied

71. Negut's colour reaction for antimony (with Rhodamine-B).
V. I. Kuznetsov (C. R. Acad. Sci. U.R.S.S., 1946, 22, 231-234;
cf. Kuznetsov, A., 1927, 1, 437).—The violet or blue colour observed
when a drop of a HCl solution of Sb^{3+} is added to a drop of a
Rhodamine-B solution is due to the pptn. of a salt of the latter,
probably containing the $SbCl_4^-$ ion. Elements which can form
complex ions or heteropoly-acids interfere, but the presence of Sb^{3+}
may be confirmed by observing the restoration of the colour of
the Rhodamine-B on addition of $SbCl_3$. A more sensitive, but
otherwise similar test, for Sb^{3+} by reaction in HCl solution with
the dye 1-aminanthraquinone \rightarrow dimethylaniline is described.
0.1 $\times 10^{-3}$ g. of Sb can be detected.
O. D. SALTWATER.

KUZNETSOV, V. I.

"Color Reactions for Quadrivalent Vanadium," Dok. AN, 52, No. 1, 1946. (Research Inst. Mineral Raw Materials. -1946-

"On E. Eegriwe's Color Reaction for Antimony (With Rhodamin B), Dok. AN, 52, No. 3, 1946. (Research Inst. Mineral Raw Materials-1945-.

KUZNETSOV, V. I.

PA 28T65

U.S.S.R./Metals

Mar/Apr 1947

Antimony - Determination
Bronze

"Rapid Determination of Antimony in Bronzes and
Brasses," V. I. Kuznetsov, VMIS, 1 p

"Tsvetnye Metally" No 2

Description of methods for quick determination of
antimony in bronzes and brasses when there is an
admixture of copper, tin, zinc, and other elements.

RS

28T65

4

7

Fundamentals of the action of organic reagents employed in inorganic analysis V. I. Kuznetsov. *Zhur. Anal. Khim.* 2, 87 (1917). A comparison is drawn between the action of some elementary org. groupings and analogous inorg. reactions. The behavior of org. reagents contg. enolic OH is similar to the hydrolysis of inorg. compounds. The reaction of a certain element toward an org. reagent can be told from the extent to which the salts of this element hydrolyze. The properties of sulfides and ammoniates of elements can be used to predict the nature of compds. into which these elements combine with org. reagents contg. NH₂ or amino N. Further, non-chromophoric ions will give color reactions only with colored reagents while chromophoric ions combine with colorless org. reagents to give colored reaction products. This does not mean that the analogy between inorg. reactions and those with org. reagents is complete.

M. Hosh

137 AND THE SERIES

PROCESSES AND PROPERTIES INDEX

7

Color reaction of antimony with methyl violet. V. I. Kuznetsov. *Zhur. Anal. Khim.* 2, 170 (1947). Methyl violet was a valuable substitute for rhodamine B in testing for Sb. To a drop of a soln. contg. trivalent Sb add 3-5 drops of concd. HCl and a drop of a 1 N nitrite soln. (to oxidize Sb to the quinquevalent state). After 1 min. add a crystal or a drop of a satd. urea soln. (to remove excess nitrite), dil. with H₂O to 3-5 ml., and add a drop of a 0.1% methyl violet. In the absence of Sb the color is yellow-green. In the presence of Sb there are formed tiny crystals which are greenish and emit in reflected light and a violet or blue in transmitted light. When the Sb is in the sample is in the quinquevalent state, it should be first reduced to the trivalent form. Heat the soln. to be tested to drive off HNO₃ and add 1-2 drops of 10% SnCl₂. Add enough nitrite soln. to oxidize excess SnCl₂ and then proceed as outlined above. The min. Sb detectable in 5 ml. of soln. is 0.5 γ. To check, add SnCl₂. Since only quinquevalent Sb gives the color reaction, the addn. of SnCl₂ fades the color. Trivalent Tl behaves like Sb. Hg and Au which give a color reaction with methyl violet also change color upon addn. of SnCl₂ but in a manner quite different from Sb. Tungstate too gives a color reaction with methyl violet but the color does not change upon addn. of SnCl₂. M. Hosen

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

FROM STUDYING

SECONDARY ONLY USE

ANALYST ONLY

COLLECTOR ONLY USE

CONCORD #

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Color test for zinc with methyl violet (sensitized by thiocyanate). V. I. Kuznetsov. *Zhur. Anal. Khim.* 2, 373-6 (1947).— This method is based on the reaction of the complex $Zn(CNS)_2$ with methyl violet in form a fine crystal, which in transmitted light is violet and at very small concn. of Zn blue. Under the same conditions Cd, Hg, Cu, Ag, Au, quadrivalent Sn, Mo, W, trivalent Fe, Co, Rh, Pd, Ir, and Pt give color reactions. As, Ir, Mo, W, and heteropolyacids also give color reactions in the absence of CNS. The color reactions of the above base metals except Fe is inhibited by adding tartaric acid. The interference of the noble metals, Cu and Fe, is removed by reduction. To test for Zn in the absence of Fe and noble metals, take 2 ml. of neutral or slightly acid soln., add 1 drop of 6 N HCl, 1 drop of 0.00% aq. methyl violet soln., and 5 drops of satd. tartaric acid soln. If none of the interfering elements is present, the tartaric acid can be omitted. To the resulting bluish-green soln. add 2 drops of 20% KCNS or NH_4CNS . In the absence of Zn, the color turns yellow. Violet or blue colors indicates the presence of Zn. The limiting diln. of Zn for this test is 1:10⁴. This test can be carried out in the presence of more than 10,000-fold of Cd, Pb, Mo, and Ni; 3,000-fold of Sn and Th, 1,000-fold of Co, and large quantities of other nonreacting elements. In the presence of Fe, Cu, and noble metals, take 2 ml. of the neutral or slightly acid soln., add 1 drop of 6 N HCl and 1 drop of 20% thiocyanate soln. Place in the soln. a strip of pure Pb and heat until the original dark red color vanishes. Cool, remove the strip, adjust vol. (if necessary) to 2 ml., add 1 drop of 6 N HCl, 5 drops of satd. tartaric acid soln., 1 drop of 0.00% methyl violet, and 1 drop thiocyanate soln. Zn is indicated by a violet or blue color. When the quantity of

Zn is small, a check should be run with a soln. of pure Fe salt. For max. sensitivity the concn. of methyl violet (0.00%) and thiocyanate (20%) should be carefully adjusted. The green color appearing when 1 ml. of methyl violet soln. and 1 ml. of 6 N HCl (1.12) are added to 2 ml. of H_2O should not change when 2 drops of thiocyanate are added and should turn blue when 3 or 4 drops of thiocyanate are added. If the soln. turns blue after 1-2 drops of thiocyanate, then either the methyl violet soln. is too concd. or the reagents are contaminated with Zn. If the soln. does not turn blue after 4 drops of thiocyanate, then the concn. of methyl violet soln. is too low. M. Hensch

KUZNETSOV, V. I.

PA 15T28

USSR/Chemistry - Iron Chlorides
Chemistry - Solvents, Organic

Feb 1947

"The Extraction of Iron Chloride from Hydrochloric
Acid Solutions With Organic Solvents," V. I. Kuz-
netsov, 6 pp

"Zhur Obshch Khim" Vol XVII, No 2

Extraction with diethyl ether, treated as the forma-
tion of oxonium compounds.

15T28

KUZNETSOV, V.I.

Kuznetsov, V.I. "On the internal dissociation, coloration, and chemical activity of intracomplex and cell salts," (reference), Soobshch. o. nauch. rabotakh chlenov Vsesoyuz. khim o-va im. Mendeleyeva, 1948, Issue 2, p. 18-21

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

Color reaction for lithium. V. J. Kuznetsov, Zash. Anal. Khim. 3, 205-302 (1948); cf. C.A. 43, 6267b. Twelve compds. which give a color reaction with Li, Ca, and Mg in a strongly alk. soln. are: 1-(*o*-arsenophenylazo)-2-naphthol-3,6-disulfonic acid (1), 1-(2-arseno-4-azo)-2-naphthol-3,6-disulfonic acid, 1-(4-nitrophenylazo)-2-naphthol-3,6-disulfonic acid, 6-tro-2-sulphophenylazo)-1-phenol-3,4-disulfonic acid, 2-(1-sulfo-2-naphthylazo)benzenesulfonic acid, 1-(*o*-sulfo-phenylazo)-2-naphthol-3,6-disulfonic acid, 2-(2-hydroxy-3,6-disulfo-1-naphthylazo)benzoic acid, 4,6-dihydroxy-3-(4-nitro-3-sulphophenylazo)-2,7-naphthalenedisulfonic acid, 2,7-naphthalenedisulfonic acid, 1-(*o*-nitrophenylazo)-2-naphthol-3,6-disulfonic acid, 1-(*o*-methoxyphenylazo)-2-naphthol-3,6-disulfonic acid. Testing for Li with 1 is described: To 3 ml. of a neutral or weakly acid soln. add 2-3 drops of 20% KOH or NaOH. Add 3 or more drops of 0.1% aq. soln. of the reagent. If Li is present, the color of the soln. is yellow or orange. In the absence of Li, as well as Ca, Sr, Ba, Ni, and Co, the color is orange-red. The min. detectable quantity of Li is 1 γ /ml. If the quantity of Li is less than 2 γ /ml. the color of the tested soln. should be compared with the color of the reagent alone. The addn. of a few drops of a Na oleate or stearate soln. in alc. destroys the color of Ca, Sr, Ba, Ni, and Co. A further addn. of an NH₄ salt destroys the color of Li but not of Be. These 2 reactions are used to test for Li in the presence of the other color-forming elements. To test for Li in the presence of Ca and Mg, add to a neutral or weakly acid soln., contg. not less than 10 γ of Li and not more than 5 mg. of Ca + Mg, a 25% soln. of KF with 3 drops for each 2 mg. of Ca or Mg. Add 4 drops of 80% KOH, heat to boiling, add 1 drop more of KF soln., and boil 1-2 min. Cool, filter or allow to settle if too turbid, and add 3 drops or more of a 0.1% soln. of the reagent. Yellow or orange color indicates Li. In this procedure the permissible Li:(Ca + Mg) ratio is 1:500. Be and Sr if present will give the same color as Li. To test for Li in the presence of other elements, e.g., in minerals, fuse in a Pt-wire loop 2-5 mg. of comminuted substance with Na₂CO₃. Dissolve the bead in 2-3 drops of 6 N HCl and dil. to 3 ml. With a very small piece of Congo paper, add dropwise 20% KOH or NaOH to alk. reaction and then 3-4 drops more. Add dropwise 10% Na₂CO₃ soln. until pptn. stops (3-5 drops), boil for 1 min., cool, and filter. Add to the filtrate 5-10 drops of a satd. Na oleate or stearate soln. in EtOH and 3-4 drops of reagent. Yellow or orange color indicates Li. Add 5-8 drops of 80% NH₄NO₃ soln.; if the former color is due to Li, it will change to orange-red. Orange-red color before addn. of NH₄NO₃ indicates the absence of Li. M. Hosen

218-514 METALLURGICAL LITERATURE CLASSIFICATION

PA 75T7

USSR/Chemistry - Colorimetry
Chemistry - Minerals

May 1948

"Color Reactions for Detecting Small Concentrations of Dissolved Mineral Salts," V. I. Kuznetsov, All-Union Inst of Mineral Raw Materials, 4 pp

"Zavod Lab" Vol XIV, No 5

Small concentrations (1:1,000,000 for calcium) of mineral salts in solution can be detected by adding suitable reagent and noting resulting color change, which varies according to class of metal. Examples of such reagents are 2-oxynaphthalin (1-azo-2)-naphthalin-1-sulfo acid, and stilbene-4,4'-bis

1948

USSR/Chemistry - Colorimetry (Contd)

May 1948

(1-azo-1) - 2-oxynaphthalin-2, 2'-disulfo acid, syntheses of which are described.

KUZNETSOV, V. I.

1948

1ST AND 2ND CODES		PROCESS AND PREPARED INDEX	
<div style="position: absolute; top: 10px; left: 10px; font-size: 2em; font-weight: bold;">CA</div>		<div style="position: absolute; top: 10px; right: 10px; font-size: 2em; font-weight: bold;">7</div>	
<p>Qualitative color reactions of lithium, calcium, and magnesium. V. I. Kuznetsov. <i>Iskushi Abad. Nauk S.S.S.R.</i> 59, 501-5 (1918).—Color reactions for Li, Ca, and Mg are given by a no. of azo dyes, which have high order of sensitivity (1 part in several millions). The colors are developed in basic solns., Ca and Mg even in NH_4OH solns.; Li requires caustic alkali. 4-Hydroxyphenylazo-7-(1,8-dihydroxynaphthalene-3,6-disulfonic acid) gives a brownish pink color with Li, blue-red with Ca, blue with Mg; (4'-hydroxy-3',5'-disulfo-2-arsonophenyl)azo-7-(1,8-dihydroxynaphthalene-3,6-disulfonic acid) gives brownish pink with Li, red-blue with Ca, blue with Mg; (4-nitro-2-arsonophenyl)azo-7-(1,8-dihydroxy-3,6-naphthalene-disulfonic acid) gives blue with Li, pink with Ca, blue-violet with Mg; the corresponding 4-nitro-2-sulfo compd. gives blue-violet with Li, red-violet with Ca, red-violet with Mg; (2-carboxyphenyl)azo-1-(3-hydroxy-3,6-disulfonaphthalene) gives yellow with Li, yellow with Ca, pink-orange with Mg; (2-sulfophenyl)azo-1-(3-hydroxy-3,6-disulfonaphthalene) gives orange with Li, yellow with Ca, orange-red with Mg; (4'-hydroxy-3',5'-disulfo-2-arsonophenyl)azo-1-(2-hydroxy-3,6-disulfonaphthalene) gives biphenyl-yellow with Li, yellow with Ca and Mg; (4-nitro-2-arsonophenyl)azo-1-(3-hydroxy-3,6-disulfonaphthalene) gives pink with Li, red-pink with Ca, and violet with Mg; (3,4-dinitrophenyl)azo-4-hydroxy-3-carboxybenzene gives red-pink with Li, deep pink with Ca, and red-violet with Mg; (4-hydroxy-2-carboxyphenyl)azo-3-hydroxy-1,4-naphthoquinone gives violet with Li, pink with Ca, and red-pink with Mg. G. M. Kowalski</p>			
<p>ASD-66A METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>SEARCHED INDEXED</p>		<p>CLASSIFIED</p>	
<p>10000 11</p>		<p>10000 11</p>	

USRB/Chemistry - Colorimetry
Chemistry - Isomerism

Jaa/Tab 49

"Color Reactions, Connected With a Separation of Residues," V. I. Kuznetsov, Moscow, 25 pp

"Supremacy National" No 2

Treats subject under: (1) nature of phenomenon, (2) determination of adaptability of color reaction to solid-phase type, (3) selectivity of the action (4) color solid-phase reactions for anions, (5) color solid-phase reactions for anions, (6) absorption indolators, (7) converted color solid-phase reactions, and (8) search for new organic reagents for use in color

28/1/95

~~USERS/Chemistry - Colorimetry (Contd)~~

Jan/Feb 64

solid-phase reactions. A good index of the described genetic and metabolic disorders, also described by Kihlborn, is available in the literature. In the case of the genetic disorders, the index is also available in the literature. In the case of the genetic disorders, the index is also available in the literature.

28/1/92

KUZNETSOV, V. I.

KUZNETSOV, V. I.

35892

Zavisimost' Mineral'nogo Sostava Rud ot Vmeshcha Yushchikh Porod V odnom Rtutnom
Mestoro Zh De Nii. Mineral. Sbornik (L'vov), No. 3, 1949, C. 63-74.

SO: Letopis' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949

KUZNETSOV, V.I.

PA 50/49T1

USSR/Academy of Sciences
Chemical Sciences

May 49

"Annotations on Work Submitted in Competition for
the D. I. Mendeleev Award" 10 $\frac{1}{2}$ pp

"Dok Ak Nauk SSSR" Vol LXVI, No 1

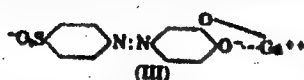
Among 16 works submitted for 1949 award are: V. I.
Kuznetsov's "Internal Dissociation, Color and
Chemical Activity of Intracomplex and Chelate
Salts," V. K. Kozlov's "Theory of the Polarization
of Real Molecules," and D. M. Frank-Kamenetskiy's
"Diffusion and Heat Transmission in Chemical
Kinetics."

50/49T1

CA

6

Internal dissociation, color, and chemical activity of inner-complex and cyclic salts. V. I. Kuznetsov (Inst. Mineral New Materials, Moscow). *Zhur. Obshch. Khim.* (J. Gen. Chem.) 36, 807-15 (1960).—Since the color of the chelate Cu complex of Na 8,4-dihydroxyquinoline-4'-sulfonate (I) is close to the orange color of the soln. of the 8-Me ether (II) of I in NaOH soln., it is concluded that, in the complex, one of the two Cu-O bonds is internally ionized, as expressed by the structure formula



I is yellow in acid and neutral soln.; it is deep rose in alk. soln., where both phenolate groups are ionized; the di-Me ether (IV), which is incapable of ionization, is yellow in neutral, acid, and alk. soln. In analogy with the capacity of simple phenols to *azo*-coupling, which is greatest in alk. phenolate soln. contg. PhO^- ions, small in neutral soln. contg. PhOH , and totally absent with phenol ethers PhOR , both II in alk. soln., and III in either alk. or mineral-acid soln. are capable of *azo*-coupling with diazonium salts, whereas the unionized I and IV are not. The behavior towards *azo*-coupling is a test for the inner structure of a complex; thus, the capacity for coupling of the Cu complex of *o*-C₁₂H₇(OH), even in strong acid soln., as against the incapacity of *o*-C₁₂H₇(OH), itself except in alk. soln., demonstrates the ionization of one O-Cu bond. With the Zr and Co complex., more readily hydrolyzed than the Cu complex., *o*-C₁₂H₇(OH), forms internally ionized chelate complexes in strongly acid soln. Whereas 8-hydroxyquinoline

will not couple with diazonium salts in acid soln., it does so in the presence of a Cu salt (giving a raspberry-purple ppt.), which indicates the formation of an internally ionized complex



Whereas *o*-phenanthroline does not couple with diazonium salts, its Fe complex (but not the Cu complex) couples energetically with diazonium sulfanilate or *p*-nitroaniline-*o*-sulfonate. Less capable of *azo*-coupling than the original org. compd. is the Al complex of 8-hydroxyquinoline, towards diazonium salts; in this case, the O-Al bond is very little ionized, and similar to an O-Me bond.

N. Thon

KUZNETSOV, V. I.

Doc Chem Sci

Dissertation: "Methods for Discovering the Color Reactions for Inorganic
Ions." 15/11/50

Inst of General and Inorganic Chemistry im. N. S. Kurnakov, Acad Sci USSR

SO Vecheryaya Moskva
Sum 71

C.A.

2

Special cases of salt errors in colorimetric determinations of pH. V. I. Kametsov. *Zhur. Anal. Khim.* 5, 315-8 (1950).—Certain indicators, either because of their reaction with ions present in soln. or because of their being adsorbed by suspended matter in soln., are apt to give erroneous indications of the true pH. Among the indicators reacting with metals are alizarin yellow GG and alizarin yellow K.

Generally, in this group belong indicators contg. 2 hydroxy groups, a hydroxy and a carboxy group, or a hydroxy and an azo group ortho to each other; or the grouping (I), where X and Y are hydroxy groups, X is :O and Y is a hy-



droxy group, or X is an amino and Y a hydroxy group. This group of indicators is likely to react with multivalent metals such as Mg, Al, Fe, Cu. Among the indicators absorbed by suspended matter, e.g., fine ppts., clay, and paper fibers, is methyl violet. M. Hirsch

KUZNETSOV, V. I.

USSR/Chemistry - Analysis, Aluminum
Reagents, New Jul 50

16675

"Colorimetric Determination of Aluminum With New Reagent" Stilbazo, "V. I. Kuznetsov, G. G. Karanovich, D. A. Dreykina, Sci Res Inst of Chem Reagents

"Zavod Lsb" Vol XVI, No 7, pp 787-792

Describes new reagent "stilbazo" and its application. New method permits colorimetric determination of 0.1-5 gamma of aluminum in 5-ml volume and determination of aluminum by colorimetric titration. After reduction with ascorbic acid, determination is not hampered by presence of iron in amounts up

PP 16675

USSR/Chemistry - Analysis, Aluminum (Contd) Jul 50
to 0.1 mg in 5-ml volume. In absence of iron, influence of titanium up to 0.05 mg in 5 ml may be eliminated by adding some hydrogen peroxide. Presence of bivalent and alkali metals does not interfere with determination of aluminum.

16675

BA

AI-6

Effect of pH on colour solutions of inner co-ordination and cyclic
comp. V. I. Kuznetsov (J. gen. Chem., USSR, 1950, 20, 816-830;
U.S. transl., 668-680). The effects of pH on the colour of
solutions of complex salts are tabulated for complexes based on
both coloured and colourless org. compounds. The effects are
interpreted as due to changes in the degree of intramol. ionization
of the complexes. O. D. SALTMAN.

CA

No. 4

A supersensitive color reaction for ruthenium and osmium. V. I. Kuznetsov (Akad. Sci., U.S.S.R.). *Doklady Akad. Nauk S.S.S.R.* 70, 629-32 (1950).—Heating the test soln. with 0.3-0.5% HNO_3 in the presence of 1-C₆H₄-NH₂ and sulfanilic acid results in a bright color formation, based on initial reduction of HNO_3 to HNO_2 , which diazotizes the sulfanilic acid which couples with the amine. The pink color so formed is easily seen and since the reaction is best run hot, the amine deriva. used must be fairly stable under the conditions. PaNH_2 gives a similar color; 2-C₆H₄NH₂ gives a pink-brown color, while 1,5-naphthyl-aminosulfonic acid gives a blue-pink color when used along with sulfanilic acid; combination of *p*-nitroaniline and 1-C₆H₄NH₂ gives an orange color. The catalysis of Ru and Os permits detection of 1 part in 2×10^4 of soln. when 15 min. heating is used; at 30-min. heating the detection limit goes to 10^5 . If freshly distd. reagent is used, Ru is detected in $1:3 \times 10^5$ solns. and of Os in $1:10^6$ solns.; the test solns. are slightly acidified with HCl. The test fails if the soln. has been heated with thiourea and easily oxidizable substances reduce sensitivity while traces of nitrites give the pink color and interfere. Oxidizing agents give other interfering colors. Elements of the Pt group give the following results: Ru-red, Rh-pale brown, Pd-yellow gray color, Os-blue-red, Ir-brown-pink flakes, Pt-dirty yellow. Cu hinders color development but does not prevent it. Use 2.5 g. HNO_3 (d. 1.4, free of NO oxides) dissd. in 250 cc. H_2O , contg. 1 g. 1-C₆H₄NH₂ and 1.5 g. sulfanilic acid, filtered and kept in dark bottle; for the test take equal vols. of the unknown soln. and reagent and heat on a boiling water bath. To test for nitrites or oxidizing agents, repeat but use HCl as the acid instead of HNO_3 . (I. M. Kosolapoff)

7

CM

Color reaction of anions of the quadrivalent elements of the type $MOCl_4^{2-}$. V. I. Kuznetsov, Doklady Akad. Nauk S.S.S.R. 70, 1011-12 (1950); Zh. Ch. A. 33, 3100. Treatment of 1-(p-dimethylaminophenyl)anthraquinone-HCl, on paper strip, with various metal ions leads to color formation. Particularly noted are the following colors: $PtCl_4^{2-}$ and $PdCl_4^{2-}$ are yellow-brown, $IrCl_4^{2-}$ and $RuCl_4^{2-}$ are very pale pink, while $PtCl_6^{4-}$, $PdCl_6^{4-}$, and $IrCl_6^{4-}$ are blue-violet. Since the reagent is moderately stable to oxidation-reduction agents, $PtCl_6^{4-}$ may be detected in the presence of free Cl^- or ClO_4^- . Only $CeCl_4^{2+}$ and $MnCl_4^{2+}$ failed to give a color reaction, probably due to the strong oxidative action of these ions. Possibly the characteristic blue color is connected with the low diam. of the $MOCl_4^{2-}$ type (Sn, Pb, Te, Se, Bi, Pt, Ir). G. M. Kozlovskii

V.I. Vernadskiy Inst. Geochem. & Analytical Chem.

176T10

KUZNETSOV, V. I.

USSR/Chemistry - Industrial Hygiene Mar/Apr 51

"Colorimetric Determination of Halowax (Polychlorobiphenyls)," V.I. Kuznetsov, Z.M. Plesnitskaya, Industrial Lab, Sanitation and Epidemiol
Sta, Kirov Rayon, Moscow

"Zhur Analit Khim" Vol VI, No 2, pp 131-135

Halowax dust is often present in the air of industrial establishments where this product is milled or treated in some other manner. According to GOST 1324-47, content of halowax in the air must not exceed 1 mg per cu m of air, because this product is quite poisonous, causing dermatitis and in acute cases yellow atrophy of

176T10

USSR/Chemistry - Industrial Hygiene Mar/Apr 51
(Contd)

the liver and death. To determine content of halowax, the air is filtered through absorbent cotton, halowax extracted from cotton with ether, and an evapn of ether reacted with dimethylamine. Depth of resulting blue color, on comparison with a standard color scale, yields value for halowax content.

176T10

KUZNETSOV, V. I.

May/Jun 51

"Theoretical Bases of Color Reactions of Organic Reagents with Inorganic Ions,"
V. I. Kuznetsov, Inst. Geochem. and Anal. Chem. imeni Acad. V. I. Vernadskiy,
Acad. Sci. USSR.

Zhur. Analit. Khim., Vol. VI, No. 3, pp. 139-148.

Examined theoretical bases of color reactions for determination of almost all elements, suggesting usefulness of analogy with simple hydrolysis. Org. Colorless reagents can give color reactions with ions of elements having "chromophoric action," colored reagents with any ion. Cyclic salts of org. reagents and elements often have "intramol.dissocⁿ," whose variation produces color change. This concept makes possible prediction of color from ion, reagent, pH. "Solid phase" color reactions (pptn and suspensions), based on differences of color in dissolved and solid state, apply to any cation or anion. Mech used are: simple salt pptn. or suspension, (for noncomplex-forming, nonchromoforic ions, anions of high mol. wt.); formation of complex compound for Hg, Zn, Cu, Sb, Ga, Al, V⁺⁺⁺, Li, Ca, Mg); masking action by complex formation, or reaction of ion with complex colored compound to form more stable compound of ppt (for F⁻, Cl⁻, Br⁻, I⁻, SO₄⁻⁻, H₂PO₄⁻). Kuznetsov mentions his discovery of several hundred new color reactions.

179T33

CA

Color reactions of sulfates, selenates, phosphates, and tungstates. Ye. I. Kuznetsov, *Izvestiya (and Novosti S.S.S.R. 77, 61-4 (1981); cf. C.A. 37, 445; 43, 1446.*

Sulfates and selenates can be detected by the color change of the solns. of complexes of Ba or Sr with org. azo compounds of aromatic type in which SO_3H and OH groups are located in o,o' -positions with respect to the N_2 grouping. Complexes of Th are suitable for detection of sulfate, tungstate, and phosphate ions. The typical changes are as follows. With 1-(*o*-sulfo-phenylazo)-2-hydroxy-3,6-disulfonaphthalene, Ba in AcOH soln. in the presence of 75% EtOH or MeOH (to repress disocn.) shows a pink color initially, changing to yellow-orange in presence of SO_4^{2-} (detection limit 1.5 γ per ml.). The 1-(4-nitro-2-sulfo-phenylazo)analog (I) gives a similar change with the same sensitivity. The 1-(4-amino-2-sulfo-phenylazo)analog changes from violet to pink. 2-(4-Nitro-2-sulfo-phenylazo)-1,8-dihydroxy-3,6-disulfonaphthalene, with Ba at pH 3.4 in 75% EtOH gives a blue-pink color that changes to pink. 1,4-Dihydroxy-2-sulfoanthraquinone, with Ba at pH 8.8 in 75% EtOH gives a red-violet color, changing to raspberry on addn. of SO_4^{2-} ion. 2-(*o*-Carboxy-phenylazo)-1,8-dihydroxy-3,6-disulfonaphthalene with Th at pH 3 gives a blue-violet color, changed to pink with SO_4^{2-} (0.8 γ detection limit), WO_4^{2-} (0.5 γ); while at pH 4.2, 2 γ H_2SeO_4 can be detected, or 10 γ SO_4^{2-} ; by adding urotropin, the initial color of red-violet also changes to pink on addn. of PO_4^{3-} (0.2 γ) or oxalate ion (1 γ). The use of the latter reagent for detg. SO_4^{2-} follows: mix 1 ml. 0.2% aq. soln. of reagent with 1 ml. buffer soln. (pH 3, from sulfanilic acid and Na_2CO_3) and heat dropwise with Th nitrate until just a violet color is reached; add this together with 1 ml. buffer soln. to the unknown (neutral or slightly acid) and pink color indicates SO_4^{2-} . To det. NO_3^- , titrate the soln. with known BaCl_2 soln. with 1 ml. methylene blue mixed indicator to a gray-lilac color. (C. M. K.

.0A

7

Color reactions of chloride, bromide, and iodide ions. V. I. Kuznetsov. *Doklady Akad. Nauk S.S.S.R.* 77, 281-2 (1931); cf. *C.R.* 43, 1453. For detection of Cl, Br, or I ions the following procedure is suggested. To 2 ml. of a 0.02% soln. of the Na salt of either 8-hydroxy-5-(*p*-sulfo-phenylazo)quinoline or 8-hydroxy-5-(*p*-nitro-*o*-sulfo-phenylazo)quinoline add 1 drop concd. AcOH then dropwise 0.50N $Hg(NO_3)_2$ until red in color. Add a few drops of this to 1 ml. of neutral or slightly acidic (AcOH) soln. under test. Cl, Br, and I give a yellow-orange color, best compared with a blank. Usually 0.2-1.0 γ can be detected per ml. of soln. If $AgNO_3$ is used the AcOH is replaced by 10% NaOAc soln. The color can be used for colorimetric titration. The reagents are generally substances of the 8-hydroxyquinoline type forming colored products, after complex formation with Hg or Ag ions. At a pH too high for such color formation, the Hg and Ag complexes still form but almost no color change takes place. G. M. Kosolapoff. Determination of the sulfate ion in chromium baths. Michele Zappala. *Boll. lab. chim. provinciali* (Bologna) 1, No. 2, 23-4 (1930). A method is described for detg. SO_4^{--} in the presence of CrO_4^{--} ion after reduction of the chromate with $EtOH$ in very dil. HCl . S. A. Kaloveras

1432

KUZNETSOV, V.I.; KOSHELEVA, G.N.

New azo indicators of the methyl orange series and the relation between the structure and pH of their transition. J. Anal. Chem. U.S.S.R. 7, 61-7 '52 [Engl. translation]. (CA 47 no.19:9849 '53)

1. Inst. Chem. Reagents, Moscow.

BA

3272. Colour reaction for dichloroethane. V. I. Kuznetsov and Z. M. L'vonenko (J. anal. Chem., USSR, 1932, 7, 86-87).—At 200° quinoline gives with 1 : 2-dichloroethane a red colour that can be used for the detection of the latter in presence of CHCl_3 , CCl_4 , xylene, chlorobenzene, 1 : 1-dichloroethane, and many other solvents including alcohols, ethers, esters, etc. 0.2–0.3 ml. of quinoline is heated in a test-tube with one drop of a solvent containing 1 : 2-dichloroethane at $\pm 190^\circ$ for 3–4 min. With large amounts of 1 : 2-dichloroethane, rapid heating gives a bluish-red colour and prolonged heating a brown or brownish red colour. With small amounts, e.g. 3%, the colour is orange-yellow. 0.1 mg. can be detected if freshly distilled colorless quinoline is used. To detect 1 : 2-dichloroethane in air a stream is passed through a tube containing silica-gel. On being heated with quinoline the silica-gel becomes coloured if 1 : 2-dichloroethane is present. Similar colours are given by 1 : 2-dibromoethane, and ethyl chloride, bromide, and iodide. It is considered that the coloration is due to the formation of a cyanine dye.
G. S. SMITH.

Chem. Abs. Vol. 48, No. 8, 25 Apr 54

KUZNETSOV, V.I.

Chromophoric action of the elements. Uspekhi Khim. 21, 175-206 '52.
(CA 48 no.2:415 '54) (MLRA 5:2)

KUZNETSOV, V. I.

Gor'kiy - Chemistry, Analytical - Congresses

Conference on analytical chemistry in Gor'kiy. Zhur. anal. khim. 7, No. 4, 1952.

Regional conference held 4-6 June 52 called by Gor'kiy State U. Forty reports were heard, a number of them devoted to the theory of the action of org reagents, and to their utilization in analysis. V.I.Kuznetsov and L.M.Kul'berg reported on the effect of the peculiarities of the molecular structure of an org reagent on that reagent's reaction capability. B.A.Platunov pointed out that the completeness of the pptn of W by org reagents is detd by the nature of the precipitator and the state of the W in soln. V.M.Peshkova spoke on the ease with which dioxime complexes of Ni could be extracted during the colorimetric detection of Ni in the presence of Co and other elements. A.K.Babko reported on utilizing silicomolybdic acid and phosphomolybdic acid in analysis. V.B.Avilov was heard on the physicochem bases of the iodometric detection of As, Sb, Fe, Sn, Cr, and V, and on the theoretical bases of certain oxidizing-reducing reactions. A.M.Vasil'yev, V.F. Torpova, and A.A.Busygina reported on the possibility of separating Cu, Cd, and Zn by ionic exchange on Wofatit R with solns containing thiosulfate and acetates. Reports were also presented on sanitation-hygienic analysis. 261T27

Monthly List of Russian Accessions, Library of Congress, October 1952.
Unclassified.

KUZNETSOV, V. I.

Earths, Rare

Color reaction of rare earth elements. Zhur. anal. khim., 7, No. 4, 1952.

17-255-262

The reagent, arsenazo (benzene-2-arsonic acid - <1-azo-2> -1,8-dioxynaphthalene-3, 6-disulfo acid) (Na-salt), dissolves in water with a rose color and forms a red-violet coloration when brought together with rare-earth elements in a neutral medium. This coloration permits the detection of these rare-earth elements in dilutions up to 1:3,000,000. Describes the detection of rare-earth elements in pure solns and points out ways of removing impediments to iron and other reacting ~~arsenic~~ elements. Also describes the method for detecting rare-earth elements in minerals, where part of the reacting elements are separated by co-precipitation (during the hydrolysis of stannic chloride) with the precipitating metastannic acid, while other reacting elements in soln are masked by ammonium salicylate.

261T23

Monthly List of Russian Accessions. Library of Congress, October, 1952.

Unclassified.

KUZNETSOV, V. I.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Inorganic Chemistry

① Chem 3
The extraction of ammonium vanadium from hydro-
chloric acid solutions with organic solvents. V. I. Kuznetsov,
Gen. Chem. U.S.S.R. 22, 2187-48 (1953) (Engl.
translation).—See C.A. 47, 5831d. H. L. H.

9-2-54
JLP

KUZNETSOV, V.I., doktor khimicheskikh nauk; GLOBUS, R.L.; KARSKAYA, T.N.;
MIKHAYLOV, G.I.; PEVTSOV, G.A.; PYATNITSKAYA, G.M.; ROZHDESTVENSKIY,
M.B. [deceased]; SOKOLOV, M.I.

[Chemical reagents and preparations] Khimicheskie reaktivy i preparaty;
spravochnik. Sostaviteli V.I. Kuznetsov [i dr.] Moskva, Gos. nauchno-
tekhn. izd-vo khim. lit-ry, 1953. 668 p. (MLRA 7:4)
(Chemical tests and reagents)

3
Syntheses with complex compounds. I. Preparation of
Al derivs from pyrocatechol. V. I. Kuznetsov and A. A.
Nemovskii (V. I. Yermolovskii, 1931, *Geokhimiya* and *Anal.*
Chem., Acad. Sci. U.S.S.R., Moscow). *Sbornik State*
Obshchei Khim. 2, 1378-81 (1953). To 5.5 g. α -C₁₂H₁₀(OH)₂
and 18.5 g. Al₂(SO₄)₃·18 H₂O in 20 ml. H₂O with ice cooling
was added PhN₂Cl from 4.7 ml. PhNH₂, 40 ml. H₂O, 7 ml.
H₂SO₄ (or HCl), and 3.5 g. NaNO₂. The mixt. was treated
with 50 ml. 20% NaOAc over 40 min. yielding a red ppt. of
the Al deriv. of 3,4-dihydroxyazobenzene. This mixt. was
treated with 15 ml. concd. HCl and the resulting brown
ppt. of 3,4-dihydroxyazobenzene is sepd. in 72% yield, m.
165° (from EtOH). By the usual procedure, PhN₂Cl and
an alk. soln. of catechol gave only gas and tar; in acid soln.
no coupling took place. Similarly, 1-CuH₂N₂Cl (or sulfate)
gave 81% 1-(3,4-dihydroxyphenylazo)naphthalene, cherry
red, m. 201.5° (from EtOH). From *p*-toluidine was ob-
tained 80% 4'-methyl-3,4-dihydroxyazobenzene, deep cherry
red, m. 175° (from EtOH), while *o*-anisidine similarly gave
77% 2'-methoxy-3,4-dihydroxyazobenzene, red-brown, m.
149° (from EtOH), and *m*-xylydine gave 2,4-dimethyl-3,4'-
dihydroxyazobenzene, red, m. 183°. Similarly were ob-
tained 3,4-dihydroxy-3'-methyl-6'-methoxyazobenzene, 79%,
m. 162°, and 3,4-dihydroxy-2'-carboxyazobenzene, 75%, m.
183°. The formation of the Al salt prevents the oxidation
of catechol by the diazonium compds. G. M. Korolapoff

KUZNETSOV, V.I.; BUDANOVA, I.M.

Determination of manganese by the persulphate method using cobalt as catalyst. J. anal. Chem. USSR, '53, 8, 55-60. (MLRA 6:2)
(BA - 0 pt.9:2470 '53)

Co instead of Ag can be used as a catalyst for the oxidation of Mn to the permanganate by ammonium persulfate or potassium persulfate for the subsequent volumetric or colorimetric detn of Mn. The method of oxidation and the method for detg the permanganate formed are the same as when Ag is used. In view of the small amount of Co salt added, and especially if added as a mixt with Ni or Cu, the soln analyzed does not have the rosy tint characteristic of Co salt solns. 261T34

1. KUZNETSOV, V. I.; KOZYREVA, I. S.
2. USSR (600)
4. Vanadium
7. Analytical reactions of tetravalent vanadium, Zhur. anal. khim.,
8, No. 2, 1953.
9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

KUZNETSOV, V.I.; KOZYREVA, L.S.

Analytical reactions of quadrivalent vanadium. Zhur. Anal. Khim. 8, 90-104
'53. (MLRA 6:4)
(CA 47 no.20:10405 '53)

1. All-Union Sci. Research Inst. Chem. Reagents, Moscow.

799R / Important problems of development of theory and practice
of use of organic reagents in inorganic analysis. V. I. CH
Kuznetsov, I. M. Kuznetsov, and L. M. Kuznetsov. 1965.
Kuznetsov, I. M., Kuznetsov, L. M., and Kuznetsov, L. M.
Nauk S(8) 3-12(1964).—A review with 121 references
Eunila Mayerle

(2)

THET

USSR

Color reaction of zinc with methyl violet and potassium ferrocyanide. V. I. Kuznetsov and I. S. Kuznetsova. Izv. Akad. Nauk SSSR Khim. Nauk 3(8), 809 (1954), cf. I. I. 43 78006. On pptn. of Zn by $K_4Fe(CN)_6$ in the presence of methyl violet, some methyl violet enters into the ppt. but not stoichiometrically. The reaction can be used for the detection of Zn in a pure soln., add 1 drop of dil. methyl violet soln. to the test soln. and, if the soln. is not acid enough, add dil. HCl dropwise until the color is green-blue. Add 1 drop of 0.2% $K_4Fe(CN)_6$ soln. and the color turns yellow if Zn is present. Alkali salts in concns. not much above 3% do not interfere. Cu^{++} , V^{++} , Cr^{++} , and Pb^{++} interfere. To remove them add N NaOH to the soln. until it is strongly basic (to litmus). After 15-20 min. filter off the ppt., and add N HCl to the filtrate until it is acid to litmus. After addn. of 1 drop 5% NH_4OH soln. heat the mixt. 10 min. on a boiling H_2O bath. After cooling, Zn is detected as above. To det. Zn in pure solns. place 1 ml. of the neutral soln., contg. not more than 5-6 γ Zn, in a test tube and add 0.4 ml. H_2O , 0.3 ml. N HCl, 0.2 ml. of 0.01% methyl violet.

(over)

BI

211 KUZNETSOV
 soln., and 0.1 ml. of 0.2% $K_4Fe(CN)_6 \cdot 3H_2O$. Compare the color with similarly prepd. Zn standards contg. 0.0 to 0.2% Zn. To det. Zn in the presence of other elements, place the slightly acid soln. in a 25-ml. volumetric flask, dil. to approx. 15 ml., and make just basic to litmus with $N NaOH$. Add another 3.3 ml. $N NaOH$. Dil. the soln. to vol., mix, and, after standing 20 min., filter. In a 100-ml. conical flask place 20 ml. of filtrate and 2.8 ml. $N HCl$. The soln. should be only weakly acid to Congo red. Then add 0.5 ml. 5% hydroxylamine sulfate. Heat to boiling, cool, and place 1 ml. in a test tube with 0.4 ml. H_2O . To this, and to a blank contg. 1.4 ml. H_2O , add 0.3 ml. $N HCl$ and 0.2 ml. 0.01% methyl violet. If the colors do not match, add 1-2 drops $N NaOH$ to the test soln. so that the colors match. If this $NaOH$ is needed, place a new 1-ml. portion of soln. in a third tube and mix with 0.3 ml. $N HCl$, and dil. H_2O . To 1.7 ml., add 0.3 ml. 0.01% methyl violet, and 0.1 ml. 0.2% $K_4Fe(CN)_6 \cdot 3H_2O$. Compare with standards prepd. at the same time. Zn was detd. in mixts. contg. different amts. of Zn, Fe, Cu, Cr, V, and Co. The error varied from -7.4 to +8.0%.
 Burille Mayer

KUZNETSOV, V. I.

USSR/Chemistry - Precipitants

Card 1/1 : Pub. 145 - 4/14

Authors : Kuznetsov, V. I.

Title : ~~Organic co-precipitants (collectors). Part 1.-Theoretical bases of the effect of organic co-precipitants~~

Periodical : Zhur. anal. khim. 9/4, 199-207, Jul-Aug 1954

Abstract : The importance of organic co-precipitants for preliminary concentration of micro-amounts of elements and consequent determination of the latter by well known methods is discussed. The advantages of organic co-precipitants over inorganic are described. Intra-complex, complex, as well as normal salts, of elements with greater organic part are considered the most suitable precipitating agents. Less soluble cation-salts of methyl violet or methylene blue and the salts of organic cations with heavy, volatile inorganic or organic anions, are among the best co-precipitants. Twenty-one references: 12-USSR; 4-German; 3-USA; 1-Hungarian and 1-Swedish (1936-1953).

Institution : Acad. of Sc. USSR, The V. I. Vernadskiy Institute of Geochemistry and Analytical Chemistry, Moscow

Submitted : January 27, 1954

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2"

KUZNETSOV, V. I.

AID P - 1119

Subject : USSR/Chemistry

Card 1/1 Pub. 119 - 2/5

Author : Kuznetsov, V. I. (Moscow)

Title : Chemical theoretical principles of isolation of elements by extraction

Periodical : Usp. khim., 23, no. 6, 654-696, 1954

Abstract : Review of various types of extraction, including extraction in the form of onium salts, extraction involving water-insoluble salts, and extraction based on physical distribution. Fifteen tables, 460 references (75 Russian: 1895-1952).

Institution : None

Submitted : No date

U S S R .

The molecular heat capacity of organic compounds with different degrees of hydrogenation. V. I. Gerasimov, Zhur. Obshch. Khim. 24, 1949-52 (1950), 4331-43. Changes in structure of org. compds., such as decrease in amt. of free rotation of a bond by introducing a double bond, or aromatization, may make a greater difference in heat capacity than that produced by loss of H atoms. H. M. Leicester

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2"

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2"

7704

UTILIZATION OF ORGANIC COPRECIPITANTS IN ANALYTICAL CHEMISTRY. V. I. Kuznetsov, p.301-19 in *CH*
Meetings of the Division of Chemical Sciences, Session of the Academy of Sciences of the U.S.S.R. on the Peaceful Use of Atomic Energy, July 1-5, 1955, Moscow, Publishing House of the Academy of Sciences of the U.S.S.R. 1955, 378p. (In Russian)

The author along with others elaborated methods of coprecipitation of Cu, Sr, Zn, Cd, In, Tl, Ti, Sn, Zr, Hf, P, Nb, Ta, Cr, Mo, W, Ni and other elements with organic coprecipitants. In some cases with simultaneous separation from almost all other elements. Even from 10^{-10} — 10^{-11} mol. solutions coprecipitations are carried out quantitatively. All the experiments were carried out with the aid of radioactive isotopes. Organic coprecipitants are useful for preliminary concentration and separation of microquantities of element for the purpose of their subsequent determination

by spectral, polarographic or chemical methods. They are also useful for improvement of the existing and elaboration of new methods of isolation of radioactive isotopes without carriers, for estimation of the stability of complex compounds and for many other purposes, (auth)

✓ Organic coprecipitants (collectors). Coprecipitation of Indium. V. I. Kuznetsov and G. V. Myasodova. *Primenenie Atomnoy i Anal. Khim. Akad. Nauk S.S.S.R., Inst. Geokhim. i Anal. Khim.* 1955, 24-8. — Small quantities of In, down to 1 γ in 20,000 ml., were sepd. from other elements and subsequently concd. by conversion to an iodide anion and collecting the latter with 6% ac. methyl violet (reagent). To 250 ml. of dil. acid (0.2-0.5N H_2SO_4) contg. In and not over 150 mg. of elements reacting with I⁻ (Hg, Pb, Bi, Sb, Sn, Cu, Zn, Cd) add not over 2 g. KI or preferably NH_4I , shake, and add dropwise 25 ml. of reagent. Filter after 20-30 min. and wash with 50-100 ml. of wash soln. (150 ml. 0.5N H_2SO_4 + 0.25 ml. reagent + 0.05 g. NH_4I). To the combined filtrate add 35 g. KI or preferably NH_4I and, dropwise, 10 ml. of reagent. Filter, wash with 30-50 ml. wash soln., dry, and ignite in crucible at 350-450°. The residue may contain some Zn and K if KI was used. If desired, dissolve the residue in 1-2 ml. 6N H_2SO_4 and reppt. In as before. M. Hosh...

CH

①

4018 AEC 11 1015000. 10 p. 177 800
ORGANIC COPOLYMERIZATION ANALYTICAL CHEMISTRY
V.I. Kuznetsov
ACADEMY OF SCIENCES OF THE USSR, THE PLACE
EEL USES OF ALUMINUM JOURNAL 11 1955
SESSION OF THE DIVISION OF CHEMICAL SCIENCE
(Translation), 10p.

This paper was originally abstracted from the Russian
and appeared in Nuclear Science Abstracts as NSA 9 7704.

KM

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2"

7719 Organic co-precipitants. II. Co-precipitation of tungsten with organic co-precipitants. V. I. Suznetsov, V. N. Olovshin and E. S. Pashina

Zh. Anal. Khim. SSSR, 1955, 10 (11, 22-23) —

Complete pptn. of W from acid solutions cannot be obtained by the use of any one of the many precipitants that have been proposed, since W in acid solutions is present both as ions of varied character and as colloidal particles. The mixed precipitant described by Platunov (Izv. Leningrad Univ., 1947 12, 101), methyl violet and tannin, is recommended. Complete pptn. occurs at a dilution of 1 in 10^4 . The method is suitable for solutions containing no other elements pptd. by ammonium molybdate.

ch
②

A
fcl

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2"

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2"

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2"

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2"

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928210007-2"